Full wwPDB X-ray Structure Validation Report ⓘ

Oct 9, 2023 – 03:27 PM EDT

PDB ID	:	7ULT
Title	:	Crystal Structure of SARS-CoV-2 Nsp16/10 Heterodimer Apo-Form.
Authors	:	Minasov, G.; Shuvalova, L.; Brunzelle, J.S.; Rosas-Lemus, M.; Kiryukhina, O.; Satchell, K.J.F.; Center for Structural Genomics of Infectious Diseases (CSGID)
Deposited on	:	2022-04-05
Resolution	:	1.90 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/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:

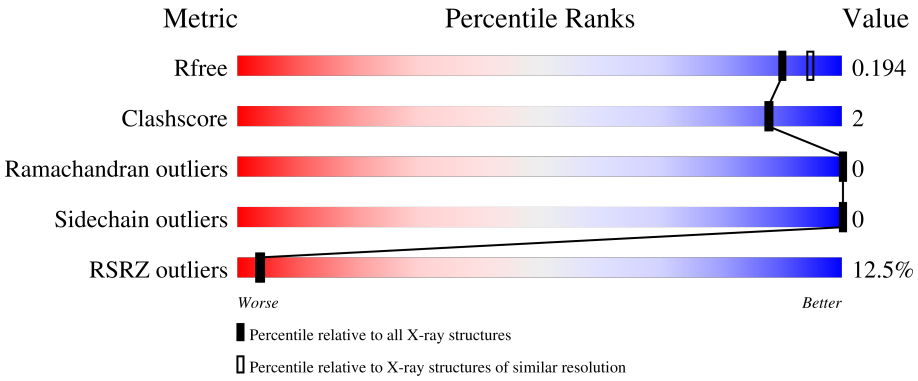
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35.1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh &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

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 1.90 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	6207 (1.90-1.90)
Clashscore	141614	6847 (1.90-1.90)
Ramachandran outliers	138981	6760 (1.90-1.90)
Sidechain outliers	138945	6760 (1.90-1.90)
RSRZ outliers	127900	6082 (1.90-1.90)

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 <=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	300	11% 91% 6%
1	C	300	9% 96%
2	B	141	18% 79% 7% 13%
2	D	141	12% 78% 18%

2 Entry composition (i)

There are 6 unique types of molecules in this entry. The entry contains 7433 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 2'-O-methyltransferase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	292	Total	C	N	O	S	0	14	0
			2412	1543	403	448	18			
1	C	298	Total	C	N	O	S	0	9	0
			2403	1528	403	454	18			

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	6797	SER	-	expression tag	UNP P0DTD1
A	6798	ASN	-	expression tag	UNP P0DTD1
C	6797	SER	-	expression tag	UNP P0DTD1
C	6798	ASN	-	expression tag	UNP P0DTD1

- Molecule 2 is a protein called Non-structural protein 10.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	122	Total	C	N	O	S	0	1	0
			916	569	155	176	16			
2	D	115	Total	C	N	O	S	0	1	0
			855	531	144	165	15			

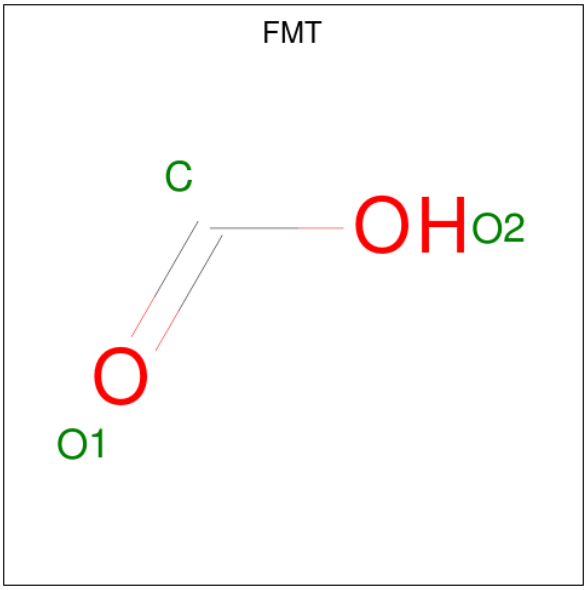
There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	4252	SER	-	expression tag	UNP P0DTD1
B	4253	ASN	-	expression tag	UNP P0DTD1
D	4252	SER	-	expression tag	UNP P0DTD1
D	4253	ASN	-	expression tag	UNP P0DTD1

- Molecule 3 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	2	Total Na 2 2	0	0
3	B	2	Total Na 2 2	0	0
3	C	3	Total Na 3 3	0	0
3	D	1	Total Na 1 1	0	0

- Molecule 4 is FORMIC ACID (three-letter code: FMT) (formula: CH_2O_2).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total C O 3 1 2	0	0
4	A	1	Total C O 3 1 2	0	0
4	A	1	Total C O 3 1 2	0	0
4	A	1	Total C O 3 1 2	0	0
4	A	1	Total C O 3 1 2	0	0
4	A	1	Total C O 3 1 2	0	0
4	A	1	Total C O 3 1 2	0	0
4	C	1	Total C O 3 1 2	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	C	1	Total C O 3 1 2	0	0
4	C	1	Total C O 3 1 2	0	0
4	C	1	Total C O 3 1 2	0	0
4	C	1	Total C O 3 1 2	0	0
4	C	1	Total C O 3 1 2	0	0
4	C	1	Total C O 3 1 2	0	0
4	C	1	Total C O 3 1 2	0	0
4	C	1	Total C O 3 1 2	0	0
4	D	1	Total C O 3 1 2	0	0

- Molecule 5 is ZINC ION (three-letter code: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	B	2	Total Zn 2 2	0	0
5	D	2	Total Zn 2 2	0	0

- Molecule 6 is water.

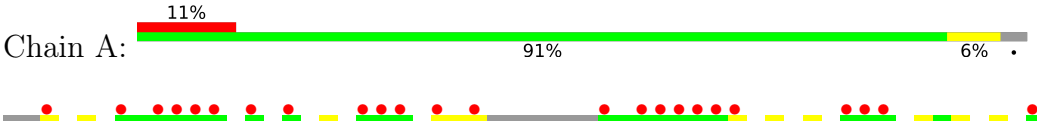
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	263	Total O 266 266	0	9
6	B	112	Total O 113 113	0	2
6	C	287	Total O 296 296	0	13
6	D	106	Total O 109 109	0	3

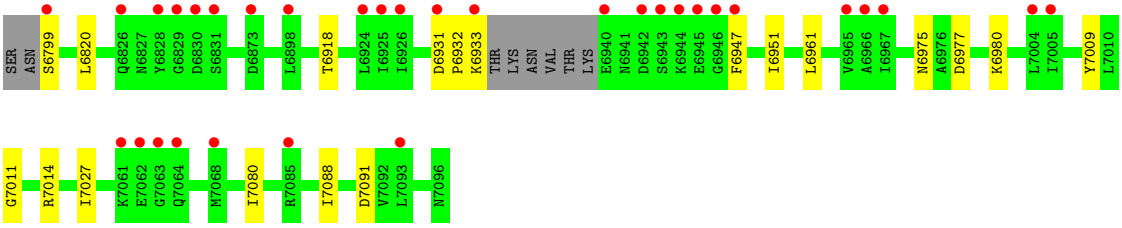
3 Residue-property plots (i)

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: 2'-O-methyltransferase

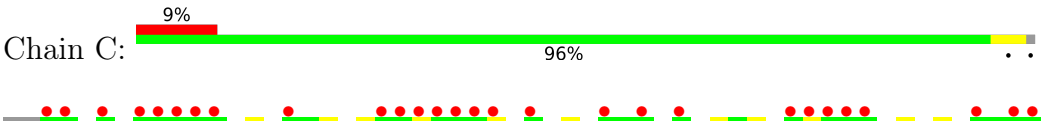
Chain A:

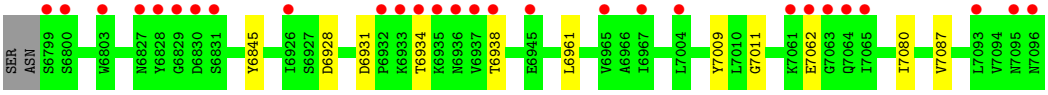




• Molecule 1: 2'-O-methyltransferase

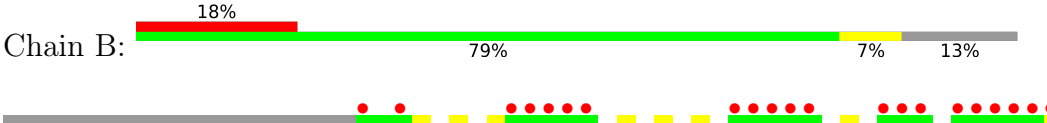
Chain C:

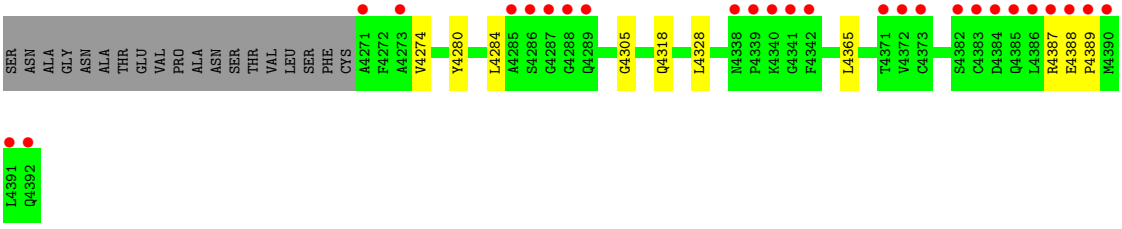




• Molecule 2: Non-structural protein 10

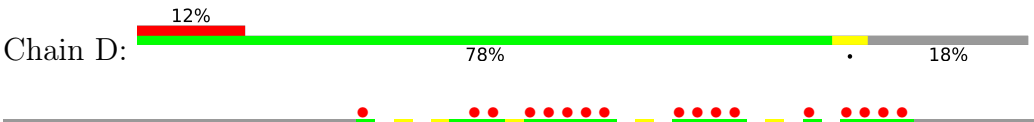
Chain B:

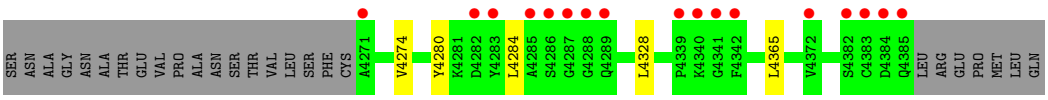




• Molecule 2: Non-structural protein 10

Chain D:





4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 32 2 1	Depositor
Cell constants a, b, c, α, β, γ	166.68Å 166.68Å 98.55Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	29.90 – 1.90 29.90 – 1.90	Depositor EDS
% Data completeness (in resolution range)	99.7 (29.90-1.90) 99.7 (29.90-1.90)	Depositor EDS
R_{merge}	0.13	Depositor
R_{sym}	0.13	Depositor
$< I/\sigma(I) >$ [1]	1.90 (at 1.91Å)	Xtriage
Refinement program	REFMAC 5.8.0267	Depositor
R, R_{free}	0.164 , 0.188 0.171 , 0.194	Depositor DCC
R_{free} test set	6205 reflections (5.04%)	wwPDB-VP
Wilson B-factor (Å^2)	27.8	Xtriage
Anisotropy	0.096	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.38 , 48.7	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.32$	Xtriage
Estimated twinning fraction	0.021 for -h,-k,l	Xtriage
F_o,F_c correlation	0.97	EDS
Total number of atoms	7433	wwPDB-VP
Average B, all atoms (Å^2)	37.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.10% of the height of the origin peak. No significant pseudotranslation is detected.*

[1]Intensities estimated from amplitudes.

[2]Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: ZN, NA, FMT

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	0.64	0/2465	0.74	0/3345
1	C	0.64	0/2454	0.73	0/3327
2	B	0.70	0/936	0.73	0/1268
2	D	0.69	0/874	0.73	0/1186
All	All	0.65	0/6729	0.73	0/9126

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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	2412	0	2381	12	0
1	C	2403	0	2373	7	0
2	B	916	0	876	6	0
2	D	855	0	811	3	0
3	A	2	0	0	0	0
3	B	2	0	0	0	0
3	C	3	0	0	0	0
3	D	1	0	0	0	0
4	A	21	0	7	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	C	27	0	9	0	0
4	D	3	0	1	0	0
5	B	2	0	0	0	0
5	D	2	0	0	0	0
6	A	266	0	0	2	0
6	B	113	0	0	0	0
6	C	296	0	0	0	0
6	D	109	0	0	0	0
All	All	7433	0	6458	26	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 2.

All (26) 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)
2:B:4388:GLU:HB3	2:B:4389:PRO:HD3	1.75	0.66
2:B:4328:LEU:HD22	2:B:4365:LEU:HD11	1.78	0.65
2:D:4328:LEU:HD22	2:D:4365:LEU:HD11	1.83	0.60
1:A:6918:THR:HG22	1:A:7088:ILE:HG22	1.86	0.58
2:B:4387:ARG:HG2	2:B:4387:ARG:O	2.07	0.55
1:A:6980:LYS:NZ	6:A:7206[B]:HOH:O	2.44	0.51
1:C:6931:ASP:O	1:C:6934:THR:HG22	2.10	0.51
1:A:6931:ASP:HB3	1:A:6947:PHE:CE2	2.47	0.49
2:D:4280:TYR:CE2	2:D:4284:LEU:HD11	2.48	0.49
1:C:7062:GLU:OE1	1:C:7062:GLU:N	2.44	0.48
2:B:4274:VAL:CG1	2:D:4274:VAL:HG11	2.46	0.45
1:C:6961:LEU:HB2	1:C:7080:ILE:HB	1.97	0.45
1:C:7009:TYR:CZ	1:C:7011:GLY:HA2	2.52	0.45
1:A:6961:LEU:HB2	1:A:7080:ILE:HB	1.99	0.45
1:C:6845:TYR:OH	1:C:6928:ASP:HB2	2.18	0.44
2:B:4280:TYR:CE2	2:B:4284:LEU:HD11	2.53	0.44
1:A:6975:ASN:OD1	1:A:6977:ASP:HB2	2.18	0.43
1:A:7091:ASP:HB3	1:C:7087:VAL:HG13	2.00	0.43
1:C:6938:THR:HG22	1:C:6938:THR:O	2.18	0.43
1:A:6951[A]:ILE:HD12	1:A:6951[A]:ILE:HA	1.89	0.43
2:B:4305:GLY:HA2	2:B:4318:GLN:OE1	2.20	0.42
1:A:6820:LEU:HD11	1:A:7027[B]:ILE:HD12	2.02	0.41
1:A:6799:SER:N	6:A:7219:HOH:O	2.53	0.41
1:A:6932:PRO:O	1:A:6933:LYS:HB2	2.19	0.41
1:A:7014:ARG:NH1	4:A:7104:FMT:O2	2.45	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:7009:TYR:CZ	1:A:7011:GLY:HA2	2.56	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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	302/300 (101%)	293 (97%)	9 (3%)	0	100	100
1	C	305/300 (102%)	297 (97%)	8 (3%)	0	100	100
2	B	121/141 (86%)	116 (96%)	5 (4%)	0	100	100
2	D	114/141 (81%)	112 (98%)	2 (2%)	0	100	100
All	All	842/882 (96%)	818 (97%)	24 (3%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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	266/260 (102%)	266 (100%)	0	100	100
1	C	266/260 (102%)	266 (100%)	0	100	100
2	B	101/115 (88%)	101 (100%)	0	100	100
2	D	94/115 (82%)	94 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	727/750 (97%)	727 (100%)	0	100 100

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

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

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 (i)

Of 29 ligands modelled in this entry, 12 are monoatomic - leaving 17 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	$\#\|Z\| > 2$
4	FMT	A	7109	-	2,2,2	0.26	0	1,1,1	0.15	0
4	FMT	A	7105	-	2,2,2	0.34	0	1,1,1	0.15	0
4	FMT	C	7105	-	2,2,2	0.26	0	1,1,1	0.19	0
4	FMT	A	7108	-	2,2,2	0.28	0	1,1,1	0.13	0
4	FMT	C	7104	-	2,2,2	0.27	0	1,1,1	0.18	0
4	FMT	C	7110	-	2,2,2	0.24	0	1,1,1	0.18	0
4	FMT	C	7111	-	2,2,2	0.29	0	1,1,1	0.15	0
4	FMT	C	7107	-	2,2,2	0.25	0	1,1,1	0.18	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
4	FMT	D	4404	-	2,2,2	0.27	0	1,1,1	0.16	0
4	FMT	A	7107	-	2,2,2	0.28	0	1,1,1	0.17	0
4	FMT	A	7104	-	2,2,2	0.28	0	1,1,1	0.17	0
4	FMT	C	7112	-	2,2,2	0.23	0	1,1,1	0.16	0
4	FMT	C	7109	-	2,2,2	0.29	0	1,1,1	0.17	0
4	FMT	C	7108	-	2,2,2	0.27	0	1,1,1	0.16	0
4	FMT	A	7103	-	2,2,2	0.25	0	1,1,1	0.20	0
4	FMT	A	7106	-	2,2,2	0.24	0	1,1,1	0.17	0
4	FMT	C	7106	-	2,2,2	0.26	0	1,1,1	0.18	0

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	A	7104	FMT	1	0

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

6.1 Protein, DNA and RNA chains

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^{th} 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	292/300 (97%)	0.42	32 (10%) 5 6	19, 30, 63, 102	0
1	C	298/300 (99%)	0.26	28 (9%) 8 9	18, 28, 69, 120	0
2	B	122/141 (86%)	0.76	26 (21%) 0 0	24, 42, 76, 120	0
2	D	115/141 (81%)	0.40	17 (14%) 2 2	22, 39, 64, 104	0
All	All	827/882 (93%)	0.41	103 (12%) 3 4	18, 32, 69, 120	0

All (103) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	6938	THR	8.6
2	B	4387	ARG	7.6
1	A	6799	SER	7.4
2	B	4339	PRO	7.1
2	B	4386	LEU	6.4
1	C	6933	LYS	6.1
1	A	6944	LYS	5.6
1	C	6937	VAL	5.6
1	C	6799	SER	5.4
1	C	7062	GLU	5.3
2	B	4388	GLU	5.3
2	D	4385	GLN	5.3
1	A	6829	GLY	5.1
2	D	4339	PRO	5.0
2	B	4340	LYS	4.8
1	A	7062	GLU	4.8
1	C	6936	ASN	4.8
1	C	6800	SER	4.7
2	B	4271	ALA	4.6
1	C	6932	PRO	4.6
1	A	7061	LYS	4.5

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Mol	Chain	Res	Type	RSRZ
2	D	4383	CYS	4.4
2	D	4285	ALA	4.4
2	D	4271	ALA	4.3
2	B	4288	GLY	4.2
2	B	4342	PHE	4.2
1	A	6828	TYR	4.1
1	C	6803	TRP	3.9
2	D	4340	LYS	3.9
2	D	4382	SER	3.9
2	B	4372	VAL	3.8
1	A	6933	LYS	3.6
1	A	7063	GLY	3.6
1	A	7085	ARG	3.5
1	C	6828	TYR	3.5
1	C	7061	LYS	3.5
1	A	6830	ASP	3.5
2	B	4286	SER	3.5
2	B	4392	GLN	3.5
1	C	7096	ASN	3.4
2	B	4385	GLN	3.4
2	D	4341	GLY	3.4
1	A	6931	ASP	3.4
2	D	4286	SER	3.4
2	D	4289	GLN	3.4
2	D	4384	ASP	3.3
2	B	4382	SER	3.3
1	C	6934	THR	3.3
2	B	4389	PRO	3.3
2	D	4372	VAL	3.2
1	A	6945	GLU	3.2
1	C	7093	LEU	3.2
1	A	6942	ASP	3.2
1	A	6873	ASP	3.1
1	C	6935	LYS	3.1
2	B	4285	ALA	3.1
2	D	4287	GLY	3.1
2	D	4342	PHE	3.1
1	C	7063	GLY	3.0
1	C	6830	ASP	3.0
1	A	6831	SER	3.0
1	C	7004	LEU	2.9
2	B	4287	GLY	2.9

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Mol	Chain	Res	Type	RSRZ
2	B	4384	ASP	2.9
1	A	7064	GLN	2.9
1	A	6926	ILE	2.9
1	C	7095	ASN	2.8
2	B	4373	CYS	2.8
2	B	4383	CYS	2.8
1	C	6965	VAL	2.7
2	B	4391	LEU	2.7
1	C	6967	ILE	2.6
1	C	6829	GLY	2.6
1	C	7064	GLN	2.5
2	D	4283	TYR	2.5
2	B	4341	GLY	2.5
2	B	4289	GLN	2.5
2	B	4273	ALA	2.4
1	A	6898	LEU	2.4
1	A	6966	ALA	2.4
1	C	6831[A]	SER	2.3
2	B	4338	ASN	2.3
1	A	6925	ILE	2.3
2	B	4371	THR	2.3
1	C	7065	ILE	2.3
1	A	6826	GLN	2.3
2	B	4390	MET	2.3
1	A	7005	ILE	2.2
1	A	6940	GLU	2.2
1	C	6945	GLU	2.1
1	A	7068	MET	2.1
1	A	6967	ILE	2.1
2	D	4288	GLY	2.1
1	C	6827	ASN	2.1
1	A	6947	PHE	2.1
1	A	6924	LEU	2.1
1	A	7093	LEU	2.1
2	D	4282	ASP	2.1
1	A	6965	VAL	2.1
1	A	6946	GLY	2.1
1	A	7004	LEU	2.0
1	C	6926	ILE	2.0
1	A	6943	SER	2.0

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^{th} 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^2)	Q<0.9
3	NA	D	4403	1/1	0.65	0.10	65,65,65,65	0
4	FMT	A	7105	3/3	0.81	0.17	54,54,59,62	0
3	NA	B	4404	1/1	0.82	0.10	54,54,54,54	0
3	NA	B	4403	1/1	0.84	0.25	57,57,57,57	0
4	FMT	A	7108	3/3	0.86	0.55	60,60,60,61	0
4	FMT	C	7111	3/3	0.88	0.18	46,46,53,57	0
4	FMT	A	7107	3/3	0.89	0.26	67,67,69,70	0
3	NA	A	7102	1/1	0.91	0.28	55,55,55,55	0
4	FMT	C	7112	3/3	0.91	0.27	57,57,63,71	0
4	FMT	D	4404	3/3	0.92	0.16	53,53,59,62	0
5	ZN	B	4402	1/1	0.92	0.09	45,45,45,45	0
3	NA	C	7101	1/1	0.93	0.17	39,39,39,39	0
4	FMT	C	7109	3/3	0.93	0.26	49,49,53,59	0
4	FMT	A	7109	3/3	0.94	0.13	45,45,50,56	0
4	FMT	C	7107	3/3	0.95	0.18	52,52,53,54	0
4	FMT	C	7106	3/3	0.95	0.16	45,45,52,53	0
5	ZN	D	4402	1/1	0.95	0.06	46,46,46,46	0
5	ZN	B	4401	1/1	0.96	0.05	34,34,34,34	0
4	FMT	A	7106	3/3	0.96	0.27	53,53,55,59	0
3	NA	C	7103	1/1	0.96	0.13	56,56,56,56	0
3	NA	A	7101	1/1	0.97	0.06	37,37,37,37	0
4	FMT	C	7110	3/3	0.97	0.20	38,38,43,52	0
4	FMT	C	7105	3/3	0.97	0.07	31,31,31,34	0
4	FMT	C	7108	3/3	0.97	0.10	53,53,53,56	0
4	FMT	A	7104	3/3	0.98	0.07	40,40,47,48	0
3	NA	C	7102	1/1	0.99	0.09	29,29,29,29	0
4	FMT	A	7103	3/3	0.99	0.09	29,29,30,31	0

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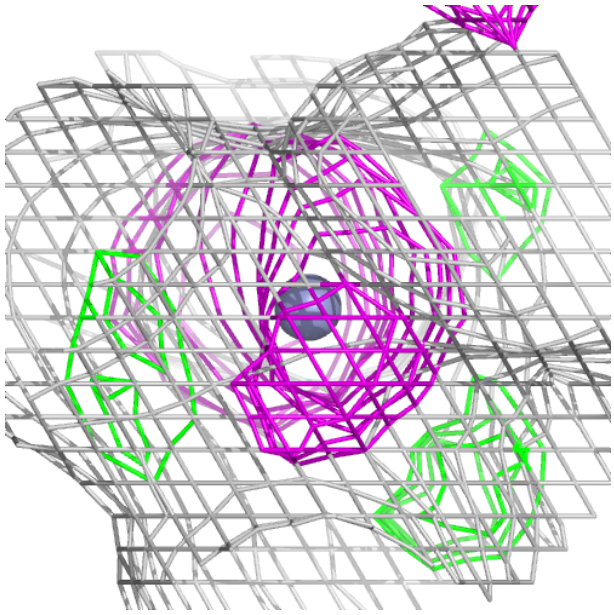
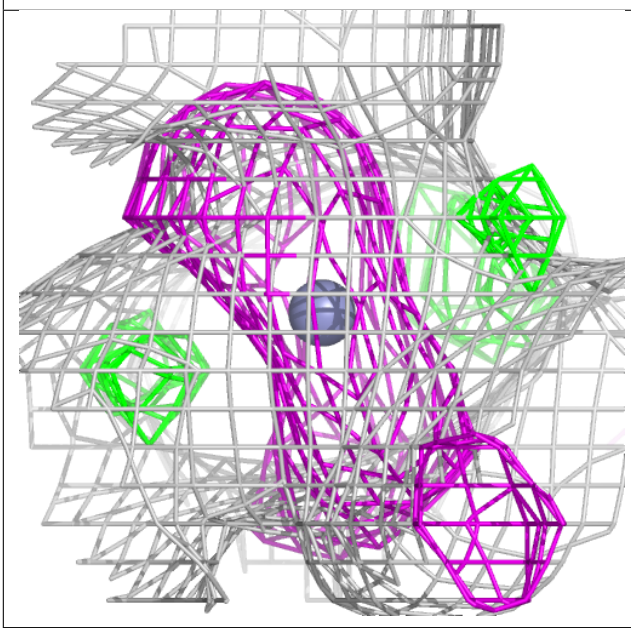
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
5	ZN	D	4401	1/1	0.99	0.04	30,30,30,30	0
4	FMT	C	7104	3/3	0.99	0.07	35,35,36,37	0

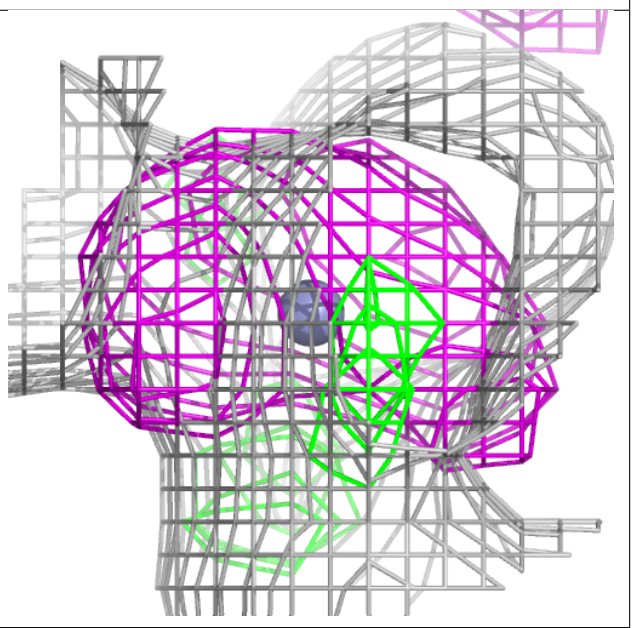
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around ZN B 4402:

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

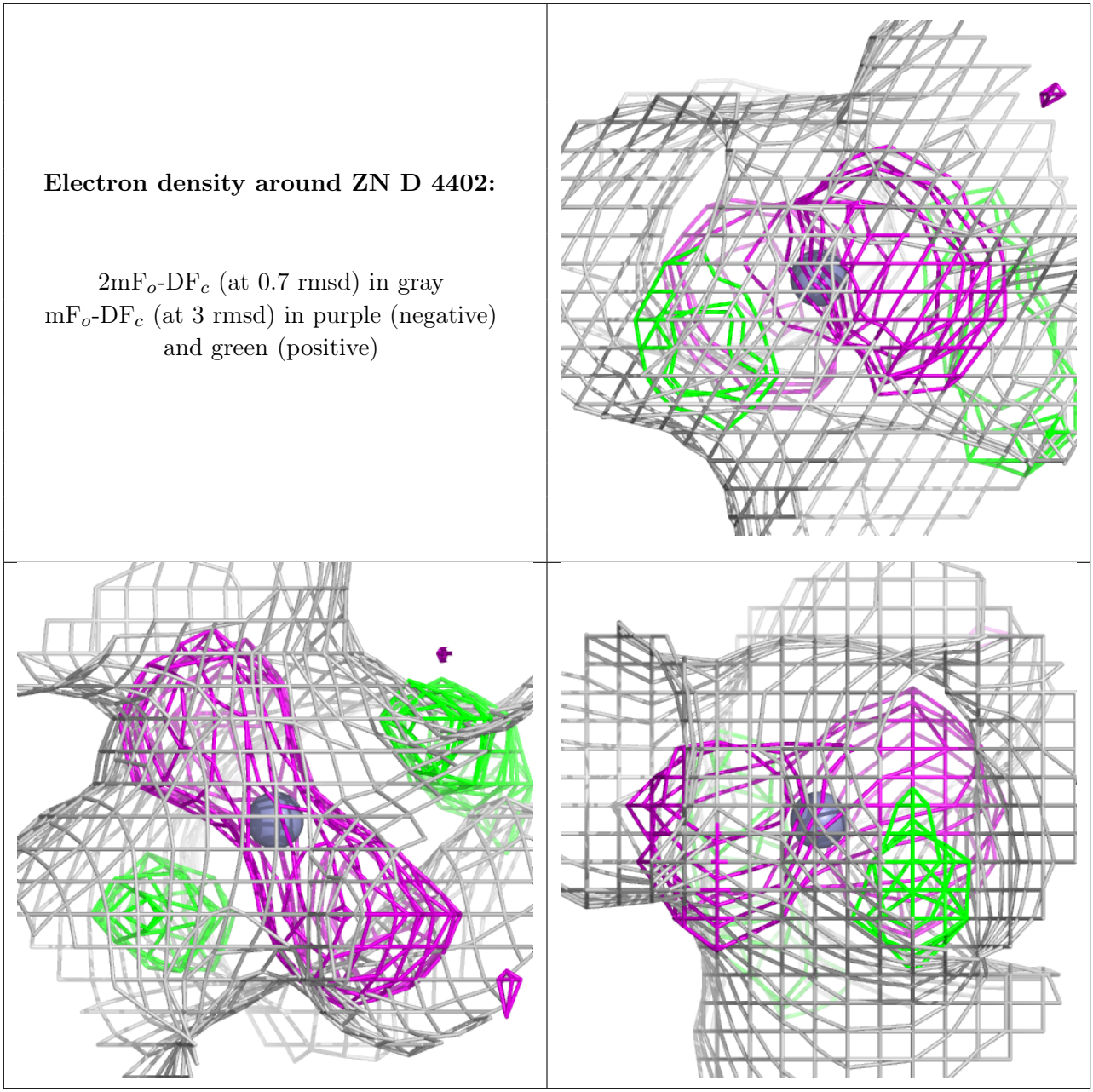






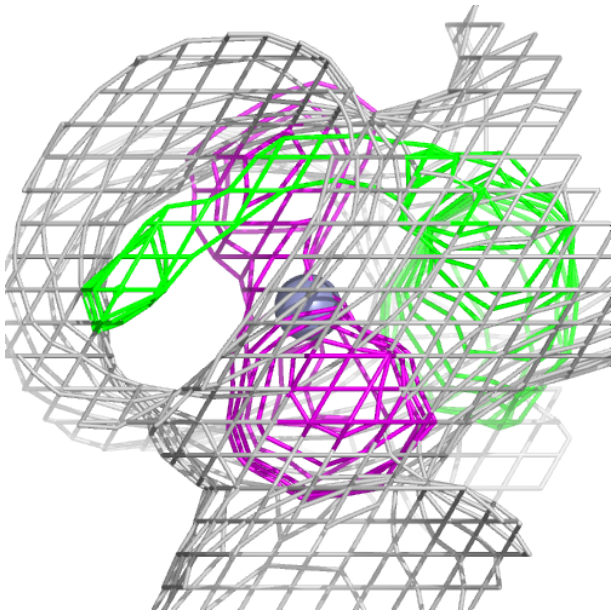
Electron density around ZN D 4402:

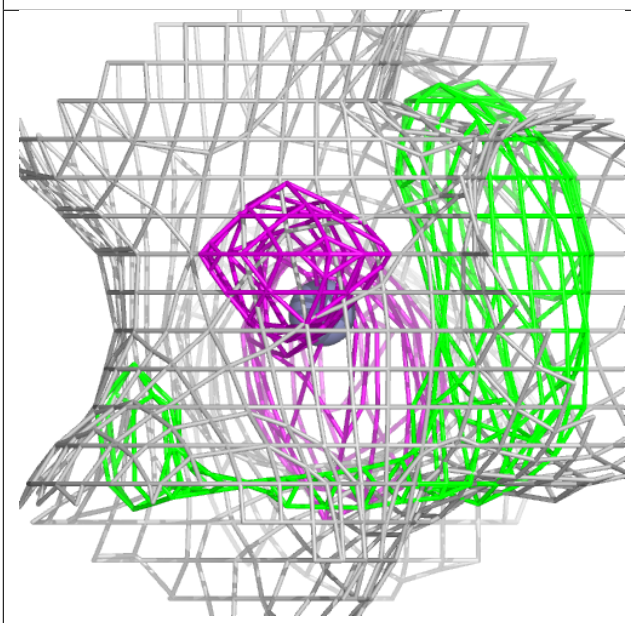
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

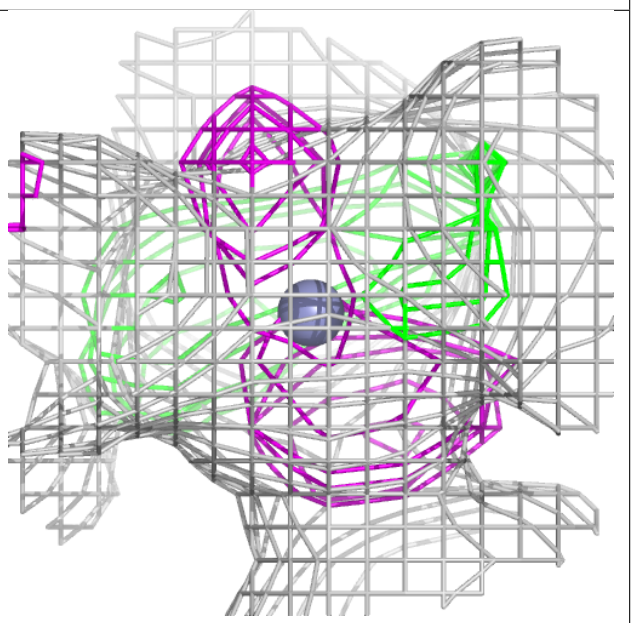


Electron density around ZN B 4401:

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

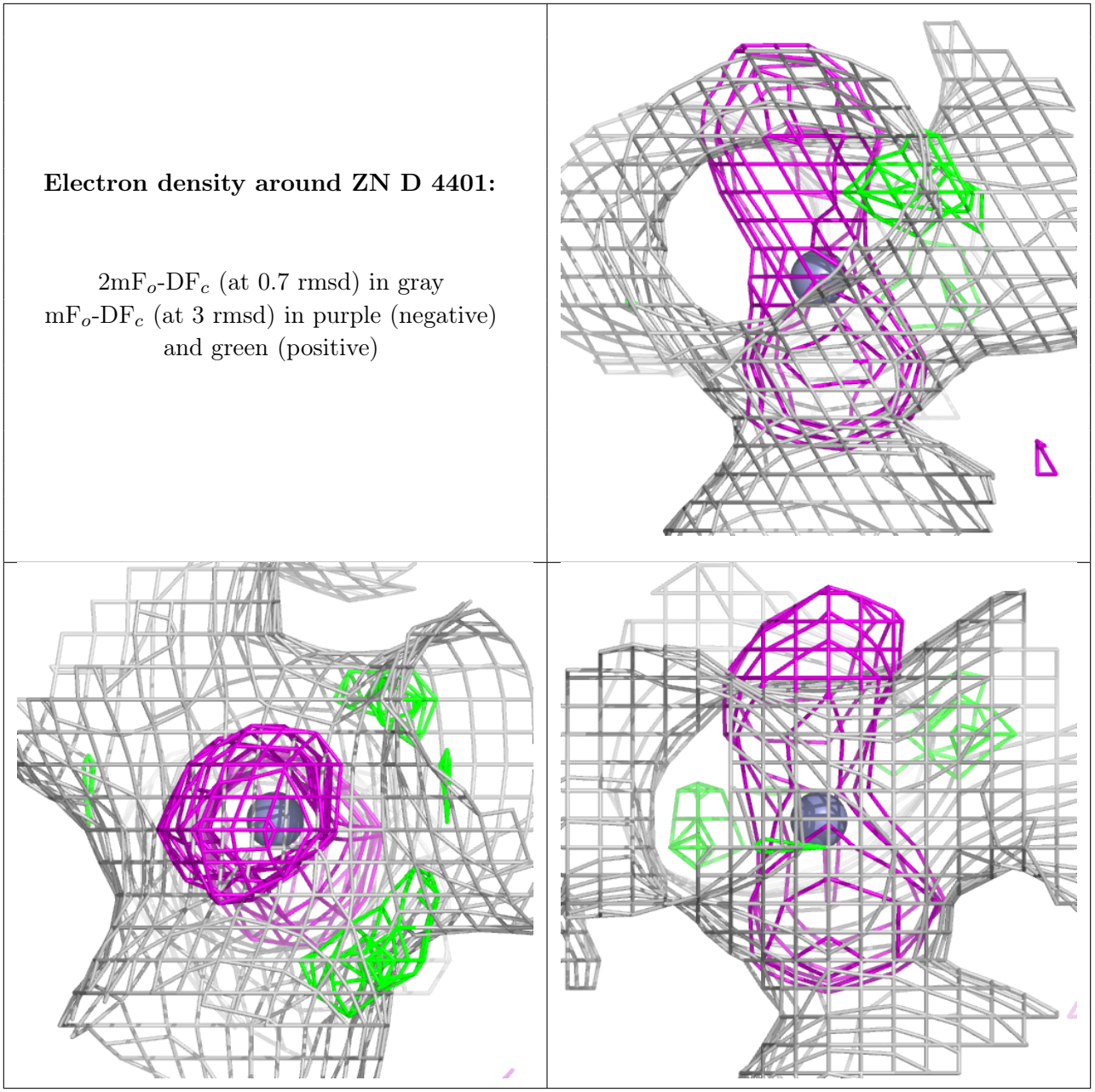






Electron density around ZN D 4401:

$2mF_o$-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

There are no such residues in this entry.