WORLDWIDE wwPDB PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report (i)

Apr 28, 2025 – 10:54 PM EDT

PDB ID : 3CD3 / pdb_00003cd3
Title : Crystal structure of phosphorylated human feline sarcoma viral oncogene homologue (v-FES) in complex with staurosporine and a consensus peptide
Authors : Filippakopoulos, P.; Salah, E.; Cooper, C.; Picaud, S.S.; Elkins, J.M.; von Delft, F.; Arrowsmith, C.H.; Edwards, A.M.; Weigelt, J.; Bountra, C.; Knapp, S.; Structural Genomics Consortium (SGC)
Deposited on : 2008-02-26
Resolution : 1.98 Å(reported)

The following versions of software and data (see references ①) were used in the production of this report:

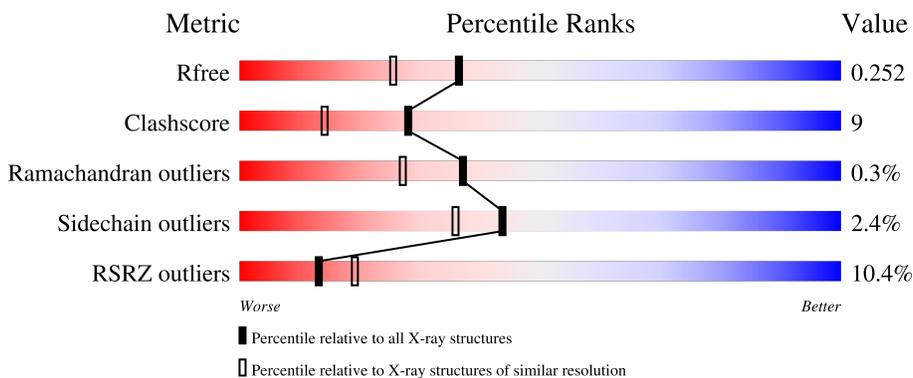|		
MolProbity	:	4-5-2 with Phenix2.0rc1
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0rc1
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.006 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.43.1

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 1.98 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	Percentile Ranks	Value
Rfree		0.252
Clashscore		9
Ramachandran outliers		0.3%
Sidechain outliers		2.4%
RSRZ outliers		10.4%

Worse ＿＿＿＿＿ *Better*

■ Percentile relative to all X-ray structures
▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	164625	1356 (1.98-1.98)
Clashscore	180529	1437 (1.98-1.98)
Ramachandran outliers	177936	1426 (1.98-1.98)
Sidechain outliers	177891	1426 (1.98-1.98)
RSRZ outliers	164620	1356 (1.98-1.98)

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	377	10%　78%　15%　•　6%
2	B	6	100%

2 Entry composition ⓘ

There are 5 unique types of molecules in this entry. The entry contains 3232 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 Proto-oncogene tyrosine-protein kinase Fes/Fps.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	353	Total 2771	C 1777	N 477	O 502	P 1	S 14	0	9	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	446	SER	-	expression tag	UNP P07332
A	447	MET	-	expression tag	UNP P07332

- Molecule 2 is a protein called Synthetic peptide.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
2	B	6	Total 47	C 31	N 5	O 11	0	0	0

- Molecule 3 is CHLORIDE ION (CCD ID: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	2	Total 2	Cl 2	0	0

- Molecule 4 is STAUROSPORINE (CCD ID: STU) (formula: $C_{28}H_{26}N_4O_3$).
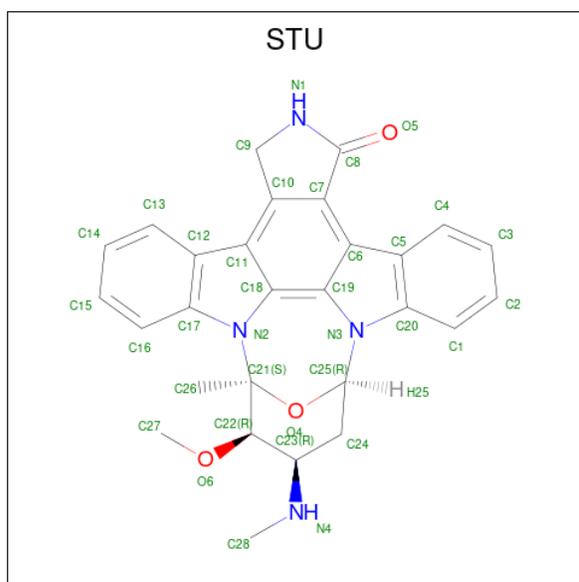
STU

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	A	1	Total	C	N	O	0	0
			35	28	4	3		
4	A	1	Total	C	N	O	0	0
			35	28	4	3		
4	A	1	Total	C	N	O	0	0
			35	28	4	3		

• Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	299	Total	O	0	0
			299	299		
5	B	8	Total	O	0	0
			8	8		

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: Proto-oncogene tyrosine-protein kinase Fes/Fps
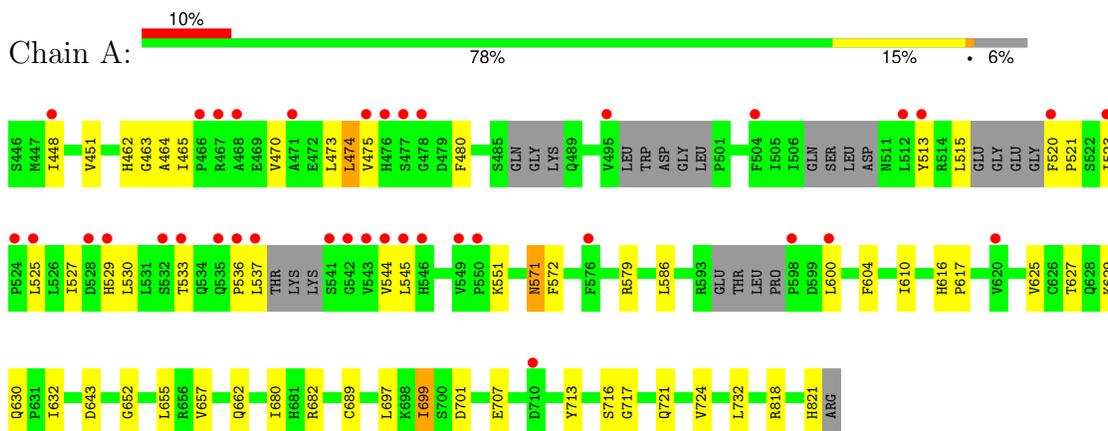
Chain A:

• Molecule 2: Synthetic peptide

Chain B:

There are no outlier residues recorded for this chain.

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	35.45Å 76.91Å 150.63Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	15.35 – 1.98 15.35 – 1.98	Depositor EDS
% Data completeness (in resolution range)	97.3 (15.35-1.98) 97.3 (15.35-1.98)	Depositor EDS
R_{merge}	0.08	Depositor
R_{sym}	0.08	Depositor
$< I/\sigma(I) >$ [1]	1.95 (at 1.98Å)	Xtriage
Refinement program	REFMAC	Depositor
R, R_{free}	0.185 , 0.247 0.200 , 0.252	Depositor DCC
R_{free} test set	1447 reflections (5.02%)	wwPDB-VP
Wilson B-factor (Å^2)	26.7	Xtriage
Anisotropy	0.253	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.37 , 64.8	EDS
L-test for twinning[2]	$< |L| > = 0.45$, $< L^2 > = 0.28$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.92	EDS
Total number of atoms	3232	wwPDB-VP
Average B, all atoms (Å^2)	49.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 6.88% of the height of the origin peak. No significant pseudotranslation is detected.*

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[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: CL, STU, PTR, ACE

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	0.83	0/2854	0.92	3/3863 (0.1%)
2	B	0.70	0/45	0.97	0/59
All	All	0.83	0/2899	0.92	3/3922 (0.1%)

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	724	VAL	N-CA-C	6.47	117.15	110.36
1	A	716	SER	N-CA-C	5.68	119.93	112.89
1	A	448	ILE	N-CA-CB	5.13	114.85	110.08

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	2771	0	2699	42	0
2	B	47	0	45	0	0
3	A	2	0	0	0	0
4	A	105	0	78	9	0
5	A	299	0	0	3	0
5	B	8	0	0	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	3232	0	2822	51	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 9.

All (51) 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:627:THR:HA	1:A:632:ILE:HD12	1.56	0.86
4:A:903:STU:H261	4:A:903:STU:H16	1.57	0.85
4:A:902:STU:H261	4:A:902:STU:H16	1.65	0.77
4:A:901:STU:H261	4:A:901:STU:H16	1.69	0.74
1:A:717:GLY:O	5:A:310:HOH:O	2.05	0.73
1:A:610:ILE:CD1	1:A:707[B]:GLU:HG3	2.29	0.63
1:A:625:VAL:HG12	1:A:627:THR:HG23	1.81	0.62
1:A:721:GLN:HG3	5:B:165:HOH:O	1.99	0.62
1:A:465:ILE:HD11	1:A:473:LEU:CD1	2.30	0.61
4:A:903:STU:H16	4:A:903:STU:C26	2.31	0.59
1:A:689:CYS:SG	1:A:699[A]:ILE:HD12	2.44	0.58
1:A:610:ILE:HD13	1:A:707[B]:GLU:HG3	1.86	0.57
1:A:465:ILE:HD11	1:A:473:LEU:HD12	1.87	0.56
1:A:530:LEU:HD13	1:A:537:LEU:CD2	2.35	0.56
1:A:610:ILE:HD13	1:A:707[B]:GLU:CG	2.36	0.55
1:A:610:ILE:HD13	1:A:707[B]:GLU:OE1	2.07	0.55
4:A:903:STU:H261	4:A:903:STU:C16	2.35	0.54
1:A:465:ILE:O	1:A:465:ILE:HG23	2.07	0.52
1:A:627:THR:HA	1:A:632:ILE:CD1	2.36	0.52
1:A:464:ALA:HB1	1:A:630:GLN:HE21	1.75	0.51
1:A:697:LEU:C	1:A:697:LEU:HD23	2.36	0.51
1:A:579:ARG:HG2	1:A:586:LEU:HD23	1.94	0.50
4:A:901:STU:H273	4:A:901:STU:C17	2.42	0.49
1:A:697:LEU:HD21	1:A:699[A]:ILE:CD1	2.42	0.49
1:A:652:GLY:HA2	1:A:655:LEU:HD12	1.95	0.48
1:A:662:GLN:HB2	1:A:818:ARG:NE	2.29	0.48
1:A:523:ILE:O	1:A:527:ILE:HG12	2.13	0.47
1:A:604:PHE:HE2	1:A:632:ILE:HG22	1.78	0.47
1:A:480:PHE:CG	1:A:545:LEU:HD22	2.49	0.47
1:A:465:ILE:HD11	1:A:473:LEU:HD11	1.96	0.47
4:A:903:STU:C26	4:A:903:STU:C16	2.91	0.47
1:A:470:VAL:HG12	1:A:474:LEU:HD22	1.96	0.46
1:A:529:HIS:CE1	1:A:533:THR:HG21	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:515:LEU:CD1	1:A:537:LEU:HD22	2.46	0.46
1:A:732:LEU:C	1:A:732:LEU:HD23	2.41	0.46
1:A:572:PHE:CE1	1:A:600:LEU:HG	2.51	0.46
1:A:629:LYS:HD2	5:A:332:HOH:O	2.17	0.45
1:A:536:PRO:HA	1:A:544:VAL:HG22	1.99	0.45
1:A:513:TYR:O	1:A:520:PHE:N	2.51	0.44
1:A:451:VAL:HG12	1:A:451:VAL:O	2.18	0.43
1:A:616:HIS:CG	1:A:617:PRO:HD2	2.53	0.43
1:A:521:PRO:HD2	1:A:525:LEU:HD13	2.01	0.43
1:A:462:HIS:O	1:A:463:GLY:C	2.59	0.43
1:A:465:ILE:O	1:A:465:ILE:CG2	2.67	0.42
4:A:902:STU:H261	4:A:902:STU:C16	2.42	0.41
1:A:464:ALA:HB3	1:A:632:ILE:HD11	2.03	0.41
4:A:901:STU:H16	4:A:901:STU:C26	2.43	0.40
1:A:551:LYS:NZ	5:A:187:HOH:O	2.52	0.40
1:A:680:ILE:HG22	1:A:682:ARG:HG3	2.04	0.40

There are no symmetry-related clashes.

5.3　Torsion angles ⓘ

5.3.1　Protein backbone ⓘ

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	347/377 (92%)	338 (97%)	8 (2%)	1 (0%)	37	27
2	B	4/6 (67%)	4 (100%)	0	0	100	100
All	All	351/383 (92%)	342 (97%)	8 (2%)	1 (0%)	37	27

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	701	ASP

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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	293/326 (90%)	284 (97%)	9 (3%)	35	25
2	B	5/5 (100%)	5 (100%)	0	100	100
All	All	298/331 (90%)	289 (97%)	9 (3%)	44	26

All (9) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	474	LEU
1	A	475	VAL
1	A	571[A]	ASN
1	A	571[B]	ASN
1	A	643	ASP
1	A	657	VAL
1	A	699[A]	ILE
1	A	699[B]	ILE
1	A	821	HIS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	529	HIS
1	A	630	GLN
1	A	662	GLN
1	A	821	HIS

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

1 non-standard protein/DNA/RNA residue is 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	#$|Z| > 2$
1	PTR	A	713	1	15,16,17	2.12	1 (6%)	17,22,24	0.99	1 (5%)

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
1	PTR	A	713	1	-	0/10/11/13	0/1/1/1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	713	PTR	OH-CZ	-7.78	1.23	1.40

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	713	PTR	OH-CZ-CE2	2.22	125.86	119.22

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.5　Carbohydrates ⓘ

There are no oligosaccharides in this entry.

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5.6 Ligand geometry ⓘ

Of 5 ligands modelled in this entry, 2 are monoatomic - leaving 3 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	STU	A	903	-	34,42,42	2.11	9 (26%)	32,68,68	2.22	6 (18%)
4	STU	A	901	-	34,42,42	2.01	7 (20%)	32,68,68	2.04	8 (25%)
4	STU	A	902	-	34,42,42	2.15	11 (32%)	32,68,68	2.19	7 (21%)

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
4	STU	A	903	-	-	1/4/42/42	-
4	STU	A	901	-	-	2/4/42/42	-
4	STU	A	902	-	-	0/4/42/42	-

All (27) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	A	901	STU	C9-C10	5.88	1.55	1.50
4	A	901	STU	C7-C8	-5.67	1.40	1.49
4	A	902	STU	C7-C8	-5.07	1.41	1.49
4	A	903	STU	C7-C8	-4.94	1.41	1.49
4	A	902	STU	C8-N1	-4.90	1.31	1.35
4	A	901	STU	O6-C22	4.79	1.50	1.42
4	A	903	STU	C9-C10	4.51	1.54	1.50
4	A	903	STU	O6-C22	4.42	1.49	1.42
4	A	902	STU	O6-C22	3.98	1.49	1.42
4	A	903	STU	O4-C25	3.57	1.49	1.43
4	A	902	STU	C9-N1	3.44	1.49	1.45
4	A	903	STU	C24-C25	3.40	1.58	1.51
4	A	902	STU	C7-C10	3.33	1.40	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	A	903	STU	C8-N1	-3.30	1.32	1.35
4	A	903	STU	C11-C18	-3.20	1.38	1.42
4	A	902	STU	C26-C21	3.18	1.55	1.51
4	A	902	STU	C11-C18	-3.14	1.38	1.42
4	A	902	STU	C22-C23	2.93	1.56	1.53
4	A	901	STU	C24-C25	2.79	1.57	1.51
4	A	901	STU	C15-C16	2.37	1.41	1.36
4	A	903	STU	C23-N4	2.19	1.49	1.47
4	A	903	STU	C10-C11	-2.14	1.39	1.43
4	A	902	STU	C15-C16	2.12	1.41	1.36
4	A	901	STU	C6-C19	-2.04	1.40	1.42
4	A	902	STU	C6-C19	-2.02	1.40	1.42
4	A	902	STU	C12-C11	-2.01	1.38	1.45
4	A	901	STU	C10-C11	-2.00	1.39	1.43

All (21) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	903	STU	C7-C8-N1	7.62	113.69	106.33
4	A	901	STU	C7-C8-N1	7.26	113.34	106.33
4	A	902	STU	C7-C8-N1	6.42	112.53	106.33
4	A	902	STU	O5-C8-N1	-6.27	118.38	125.35
4	A	903	STU	O5-C8-N1	-6.22	118.43	125.35
4	A	902	STU	C9-N1-C8	-4.30	109.94	113.86
4	A	903	STU	C9-N1-C8	-4.21	110.02	113.86
4	A	901	STU	C9-N1-C8	-4.02	110.19	113.86
4	A	903	STU	C10-C7-C8	-3.34	105.33	108.13
4	A	901	STU	C28-N4-C23	3.31	118.34	114.39
4	A	901	STU	O5-C8-N1	-3.13	121.87	125.35
4	A	901	STU	O5-C8-C7	-3.12	124.65	129.10
4	A	902	STU	C28-N4-C23	3.12	118.11	114.39
4	A	901	STU	C9-C10-C7	-3.11	108.77	109.88
4	A	902	STU	C1-C20-N3	-2.61	129.13	132.25
4	A	903	STU	O5-C8-C7	-2.36	125.73	129.10
4	A	901	STU	C11-C18-N2	-2.30	108.68	115.16
4	A	902	STU	C10-C7-C8	-2.26	106.23	108.13
4	A	902	STU	C16-C17-C12	-2.21	117.54	120.73
4	A	903	STU	C11-C18-N2	-2.15	109.10	115.16
4	A	901	STU	C10-C7-C8	-2.08	106.39	108.13

There are no chirality outliers.
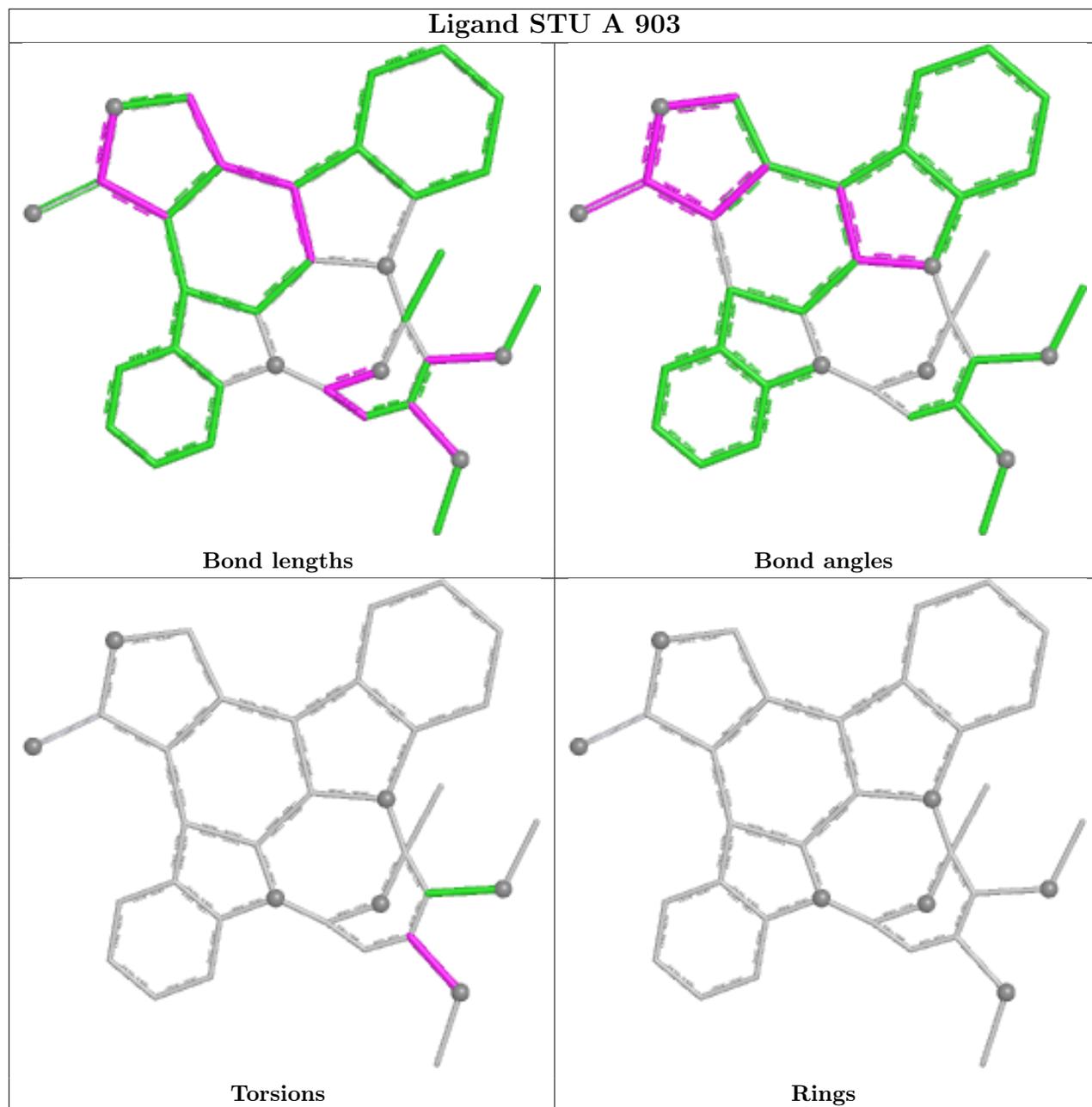
All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	A	903	STU	C24-C23-N4-C28
4	A	901	STU	C23-C22-O6-C27
4	A	901	STU	C21-C22-O6-C27

There are no ring outliers.

3 monomers are involved in 9 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	A	903	STU	4	0
4	A	901	STU	3	0
4	A	902	STU	2	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 then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand STU A 903

Bond lengths

Bond angles

Torsions

Rings

Ligand STU A 901

Bond lengths

Bond angles

Torsions

Rings

Ligand STU A 902

Bond lengths

Bond angles

Torsions

Rings
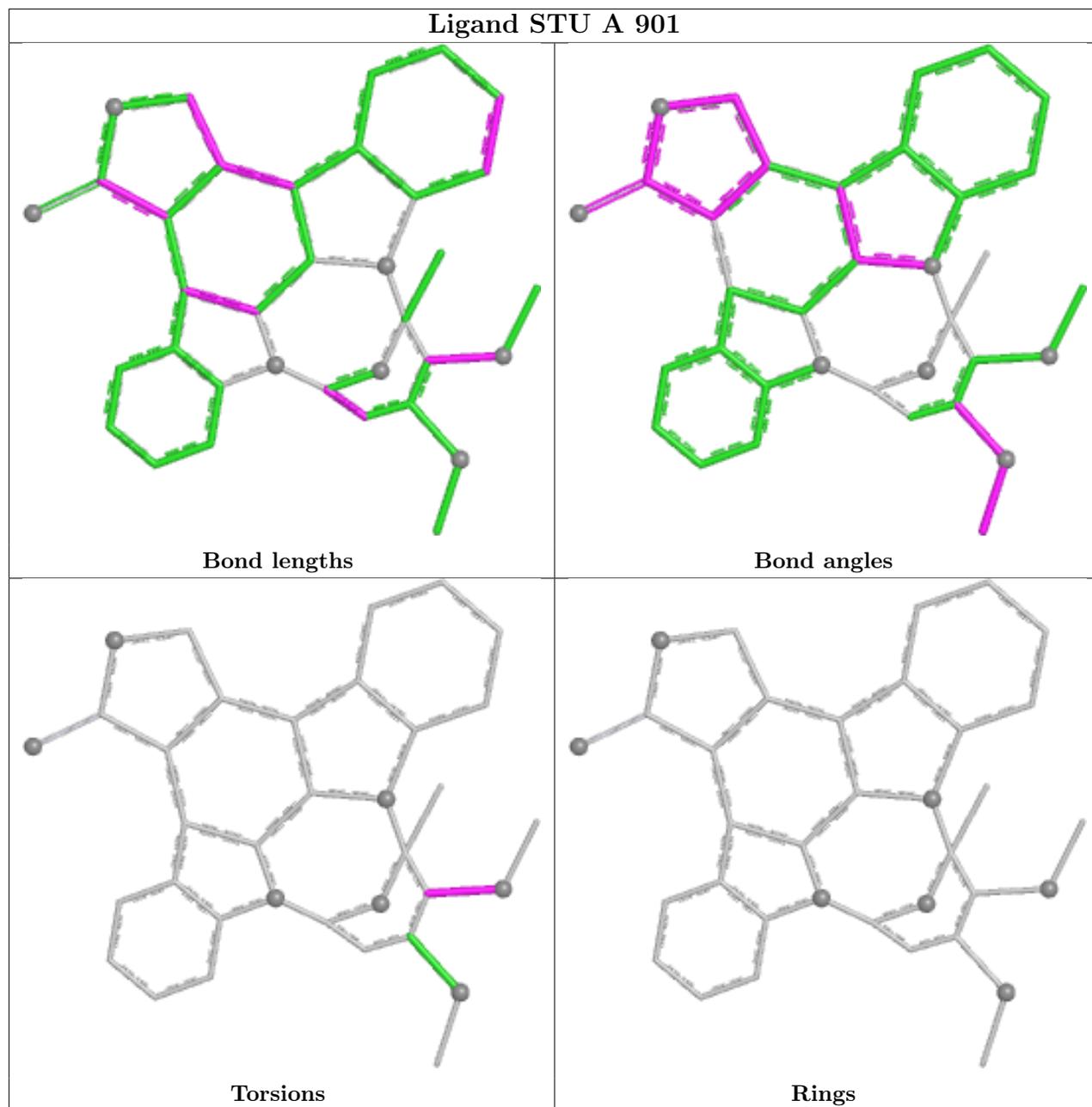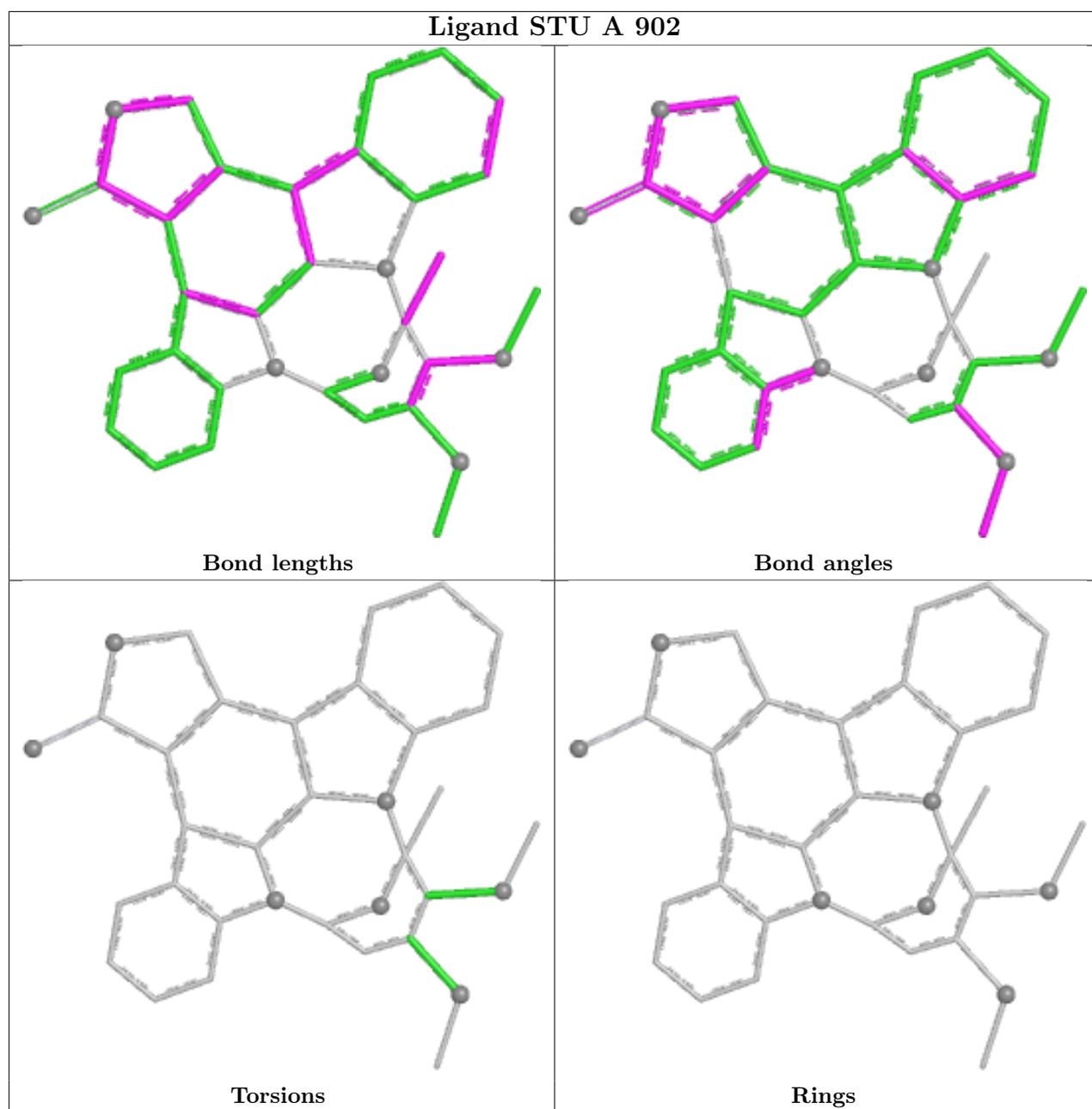
5.7 Other polymers ⓘ

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 ⓘ

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, 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	352/377 (93%)	0.86	37 (10%)	13	19	33, 46, 61, 74	9 (2%)
2	B	5/6 (83%)	0.52	0	100	100	42, 42, 45, 49	0
All	All	357/383 (93%)	0.86	37 (10%)	13	19	33, 46, 61, 74	9 (2%)

All (37) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	512	LEU	4.0
1	A	468	ALA	3.9
1	A	532	SER	3.8
1	A	504	PHE	3.8
1	A	598	PRO	3.7
1	A	471	ALA	3.2
1	A	543	VAL	3.2
1	A	495	VAL	3.1
1	A	544	VAL	3.0
1	A	546	HIS	3.0
1	A	523	ILE	2.9
1	A	529	HIS	2.9
1	A	542	GLY	2.8
1	A	535	GLN	2.8
1	A	475	VAL	2.7
1	A	576	PHE	2.7
1	A	545	LEU	2.5
1	A	549	VAL	2.5
1	A	537	LEU	2.5
1	A	448	ILE	2.4
1	A	600	LEU	2.3
1	A	541	SER	2.3
1	A	520	PHE	2.3
1	A	524	PRO	2.3

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Mol	Chain	Res	Type	RSRZ
1	A	528	ASP	2.3
1	A	513	TYR	2.3
1	A	536	PRO	2.2
1	A	533	THR	2.2
1	A	478	GLY	2.2
1	A	476	HIS	2.2
1	A	466	PRO	2.1
1	A	467	ARG	2.1
1	A	525	LEU	2.1
1	A	710	ASP	2.1
1	A	477	SER	2.1
1	A	550	PRO	2.0
1	A	620	VAL	2.0

6.2 Non-standard residues in protein, DNA, RNA chains ⓘ

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.
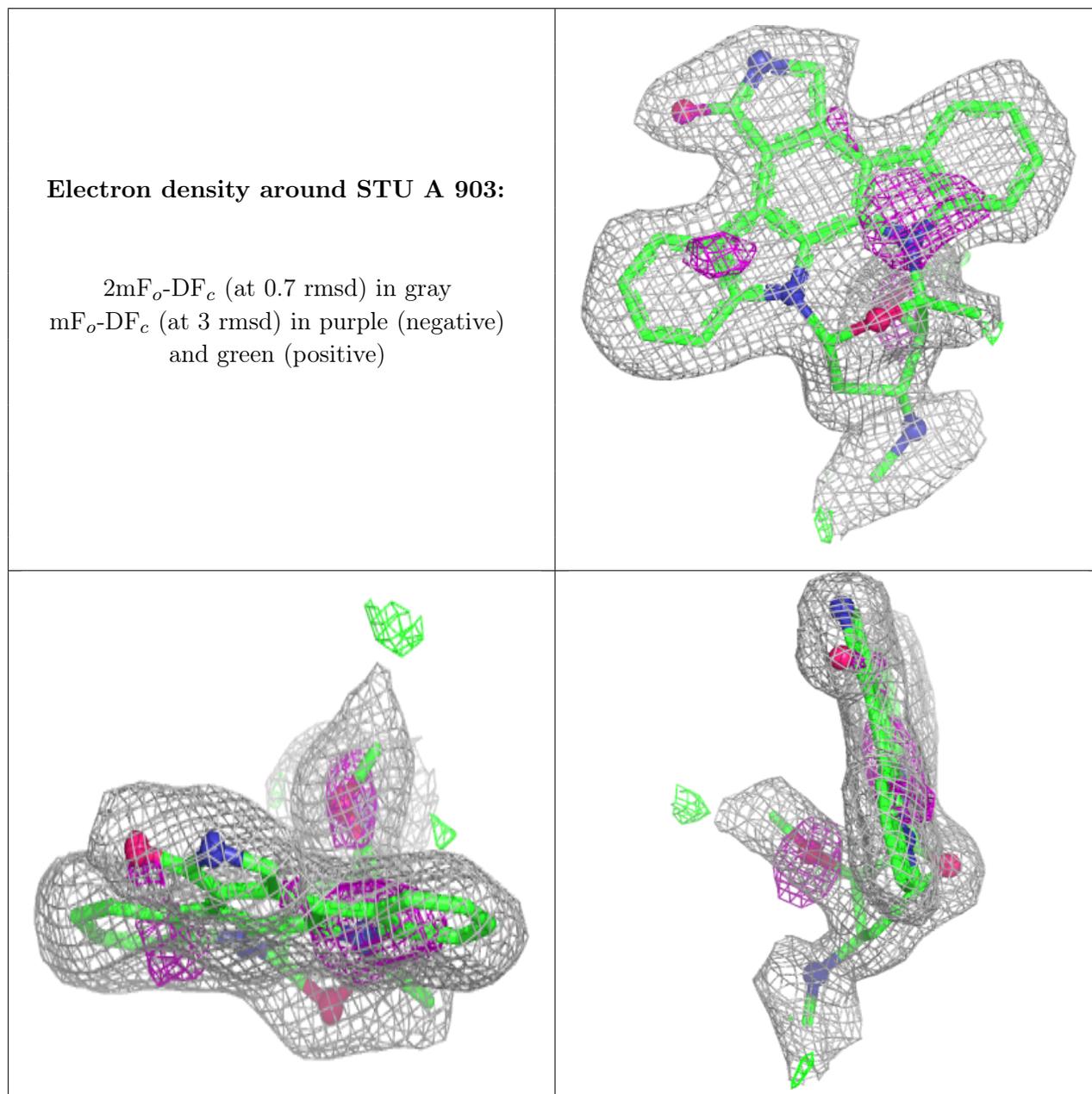
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
1	PTR	A	713	16/17	0.91	0.12	40,47,77,79	0

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

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(Å^2)	Q<0.9
4	STU	A	903	35/35	0.88	0.12	36,45,63,73	0
4	STU	A	902	35/35	0.92	0.11	33,43,50,61	0
4	STU	A	901	35/35	0.95	0.09	28,33,40,49	0
3	CL	A	905	1/1	0.97	0.13	47,47,47,47	0

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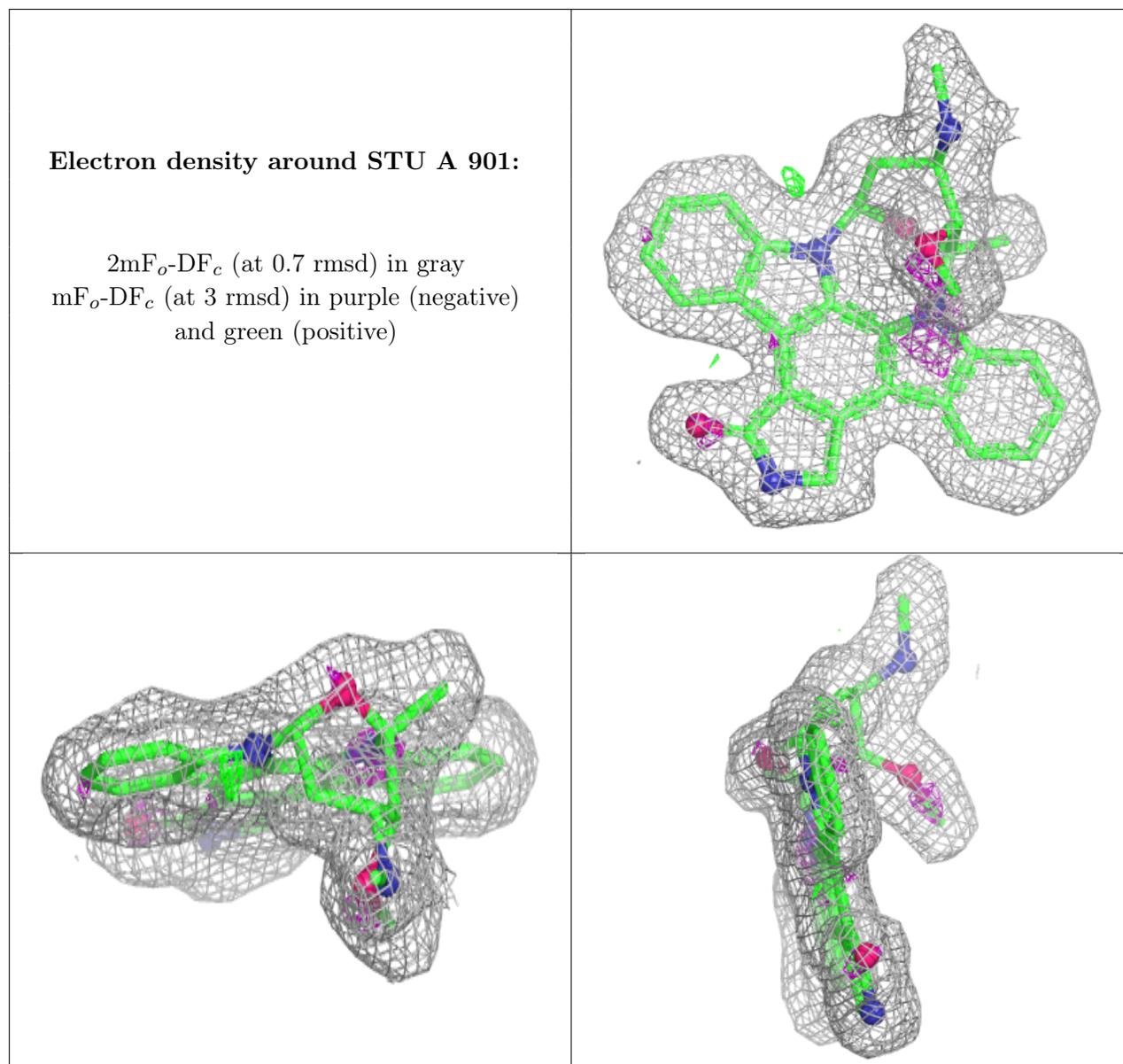| Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	CL	A	904	1/1	0.98	0.06	39,39,39,39	0

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 STU A 903:

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

Electron density around STU A 902:

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

Electron density around STU A 901:

$2mF_o$-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.