Full wwPDB X-ray Structure Validation Report ⓘ

Feb 4, 2025 – 12:06 PM EST

PDB ID	:	9DGW
Title	:	X-ray crystal structure of the Viperin-like enzyme from T. virens with bound CTP and SAM
Authors	:	Lachowicz, J.C.; Bonanno, J.B.; Grove, T.L.
Deposited on	:	2024-09-03
Resolution	:	1.72 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:

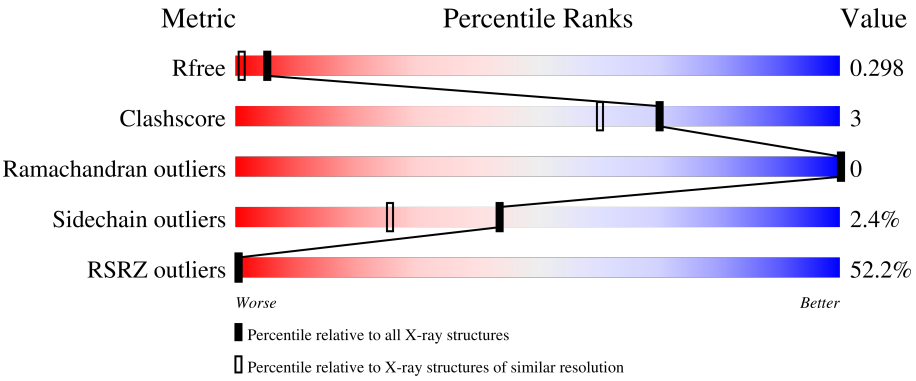
MolProbity	:	4.02b-467
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	1.21
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.004 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.40

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 1.72 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}	164625	7106 (1.74-1.70)
Clashscore	180529	7746 (1.74-1.70)
Ramachandran outliers	177936	7654 (1.74-1.70)
Sidechain outliers	177891	7654 (1.74-1.70)
RSRZ outliers	164620	7104 (1.74-1.70)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=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	315	30% 80% 8% 11%
1	B	315	32% 82% 7% 10%
1	C	315	77% 77% 11% 12%

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	SF4	C	403	-	-	X	-

2 Entry composition (i)

There are 5 unique types of molecules in this entry. The entry contains 7261 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 Radical SAM core domain-containing protein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	279	Total	C	N	O	S	0	0	0
			2250	1424	390	422	14			
1	B	282	Total	C	N	O	S	0	1	0
			2277	1439	395	429	14			
1	C	276	Total	C	N	O	S	0	3	0
			2243	1425	387	417	14			

There are 69 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-6	MET	-	initiating methionine	UNP G9MQB8
A	-5	HIS	-	expression tag	UNP G9MQB8
A	-4	HIS	-	expression tag	UNP G9MQB8
A	-3	HIS	-	expression tag	UNP G9MQB8
A	-2	HIS	-	expression tag	UNP G9MQB8
A	-1	HIS	-	expression tag	UNP G9MQB8
A	0	HIS	-	expression tag	UNP G9MQB8
A	1	SER	-	expression tag	UNP G9MQB8
A	2	SER	-	expression tag	UNP G9MQB8
A	3	GLY	-	expression tag	UNP G9MQB8
A	4	VAL	-	expression tag	UNP G9MQB8
A	5	ASP	-	expression tag	UNP G9MQB8
A	6	LEU	-	expression tag	UNP G9MQB8
A	7	GLY	-	expression tag	UNP G9MQB8
A	8	THR	-	expression tag	UNP G9MQB8
A	9	GLU	-	expression tag	UNP G9MQB8
A	10	ASN	-	expression tag	UNP G9MQB8
A	11	LEU	-	expression tag	UNP G9MQB8
A	12	TYR	-	expression tag	UNP G9MQB8
A	13	PHE	-	expression tag	UNP G9MQB8
A	14	GLN	-	expression tag	UNP G9MQB8
A	15	SER	-	expression tag	UNP G9MQB8
A	16	MET	-	expression tag	UNP G9MQB8

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Chain	Residue	Modelled	Actual	Comment	Reference
B	-6	MET	-	initiating methionine	UNP G9MQB8
B	-5	HIS	-	expression tag	UNP G9MQB8
B	-4	HIS	-	expression tag	UNP G9MQB8
B	-3	HIS	-	expression tag	UNP G9MQB8
B	-2	HIS	-	expression tag	UNP G9MQB8
B	-1	HIS	-	expression tag	UNP G9MQB8
B	0	HIS	-	expression tag	UNP G9MQB8
B	1	SER	-	expression tag	UNP G9MQB8
B	2	SER	-	expression tag	UNP G9MQB8
B	3	GLY	-	expression tag	UNP G9MQB8
B	4	VAL	-	expression tag	UNP G9MQB8
B	5	ASP	-	expression tag	UNP G9MQB8
B	6	LEU	-	expression tag	UNP G9MQB8
B	7	GLY	-	expression tag	UNP G9MQB8
B	8	THR	-	expression tag	UNP G9MQB8
B	9	GLU	-	expression tag	UNP G9MQB8
B	10	ASN	-	expression tag	UNP G9MQB8
B	11	LEU	-	expression tag	UNP G9MQB8
B	12	TYR	-	expression tag	UNP G9MQB8
B	13	PHE	-	expression tag	UNP G9MQB8
B	14	GLN	-	expression tag	UNP G9MQB8
B	15	SER	-	expression tag	UNP G9MQB8
B	16	MET	-	expression tag	UNP G9MQB8
C	-6	MET	-	initiating methionine	UNP G9MQB8
C	-5	HIS	-	expression tag	UNP G9MQB8
C	-4	HIS	-	expression tag	UNP G9MQB8
C	-3	HIS	-	expression tag	UNP G9MQB8
C	-2	HIS	-	expression tag	UNP G9MQB8
C	-1	HIS	-	expression tag	UNP G9MQB8
C	0	HIS	-	expression tag	UNP G9MQB8
C	1	SER	-	expression tag	UNP G9MQB8
C	2	SER	-	expression tag	UNP G9MQB8
C	3	GLY	-	expression tag	UNP G9MQB8
C	4	VAL	-	expression tag	UNP G9MQB8
C	5	ASP	-	expression tag	UNP G9MQB8
C	6	LEU	-	expression tag	UNP G9MQB8
C	7	GLY	-	expression tag	UNP G9MQB8
C	8	THR	-	expression tag	UNP G9MQB8
C	9	GLU	-	expression tag	UNP G9MQB8
C	10	ASN	-	expression tag	UNP G9MQB8
C	11	LEU	-	expression tag	UNP G9MQB8
C	12	TYR	-	expression tag	UNP G9MQB8

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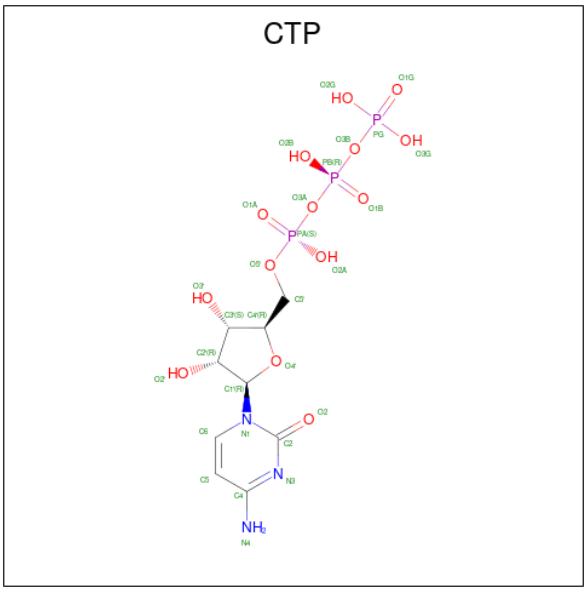
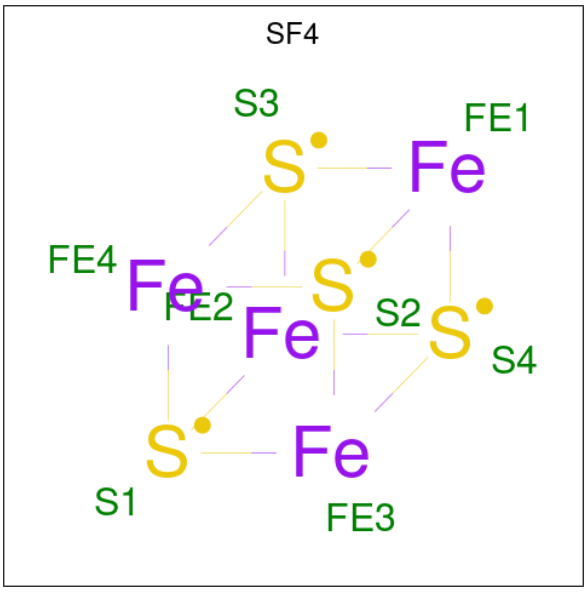
Chain	Residue	Modelled	Actual	Comment	Reference
C	13	PHE	-	expression tag	UNP G9MQB8
C	14	GLN	-	expression tag	UNP G9MQB8
C	15	SER	-	expression tag	UNP G9MQB8
C	16	MET	-	expression tag	UNP G9MQB8

- Molecule 2 is CYTIDINE-5'-TRIPHOSPHATE (three-letter code: CTP) (formula: $C_9H_{16}N_3O_{14}P_3$) (labeled as "Ligand of Interest" by depositor).



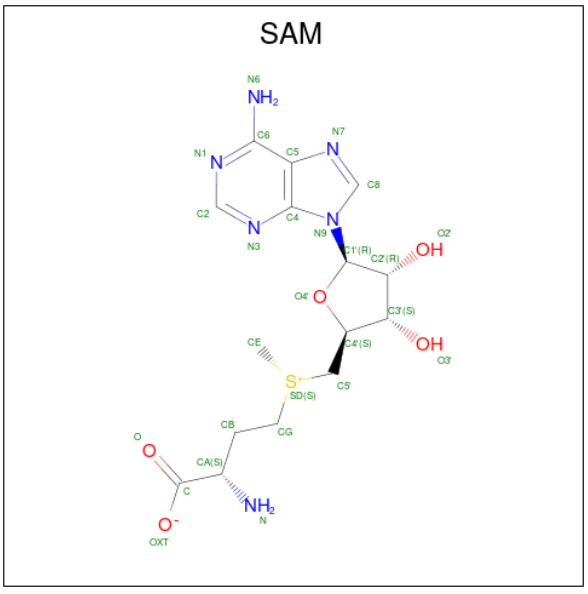
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			29	9	3	14	3		
2	B	1	Total	C	N	O	P	0	0
			29	9	3	14	3		
2	C	1	Total	C	N	O	P	0	0
			29	9	3	14	3		

- Molecule 3 is IRON/SULFUR CLUSTER (three-letter code: SF4) (formula: Fe_4S_4) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total Fe S 8 4 4	0	0
3	B	1	Total Fe S 8 4 4	0	0
3	C	1	Total Fe S 8 4 4	0	0

- Molecule 4 is S-ADENOSYLMETHIONINE (three-letter code: SAM) (formula: $C_{15}H_{22}N_6O_5S$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
4	A	1	Total	C	N	O	S	0	0
			27	15	6	5	1		
4	B	1	Total	C	N	O	S	0	0
			27	15	6	5	1		
4	C	1	Total	C	N	O	S	0	0
			27	15	6	5	1		

- Molecule 5 is water.

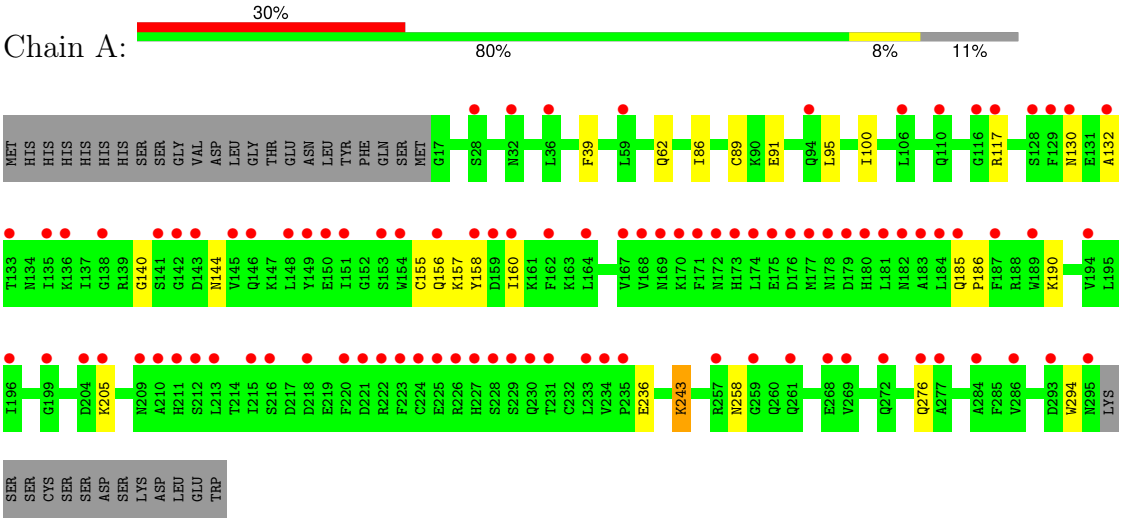
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	121	Total	O	0	0
			121	121		
5	B	134	Total	O	0	0
			134	134		
5	C	44	Total	O	0	0
			44	44		

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.

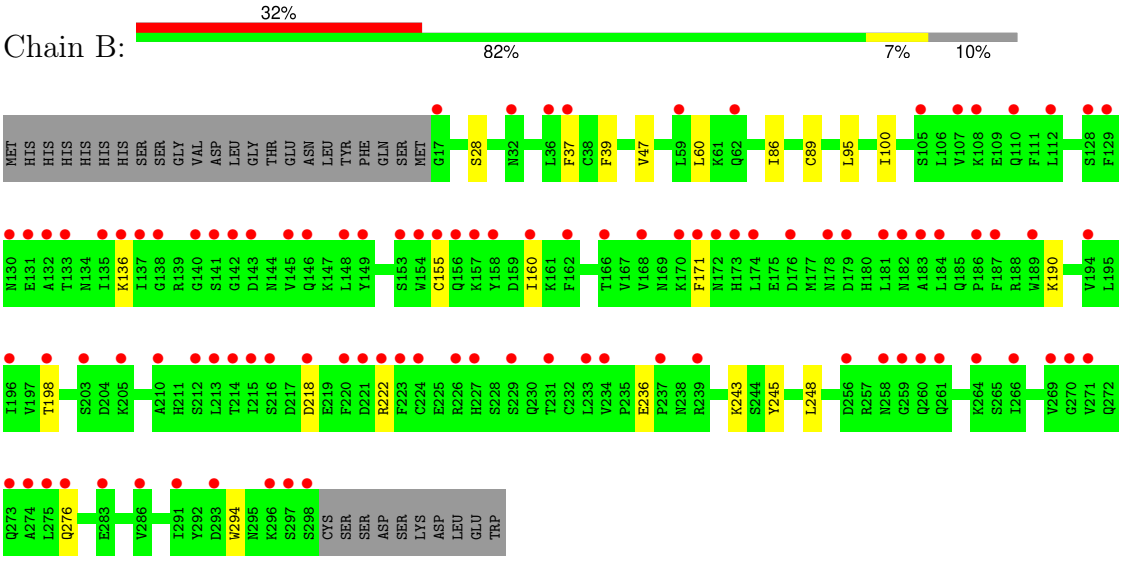
• Molecule 1: Radical SAM core domain-containing protein

Chain A:



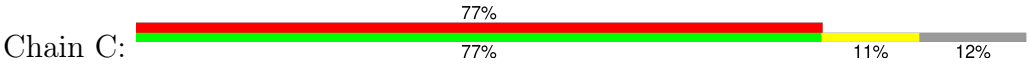
• Molecule 1: Radical SAM core domain-containing protein

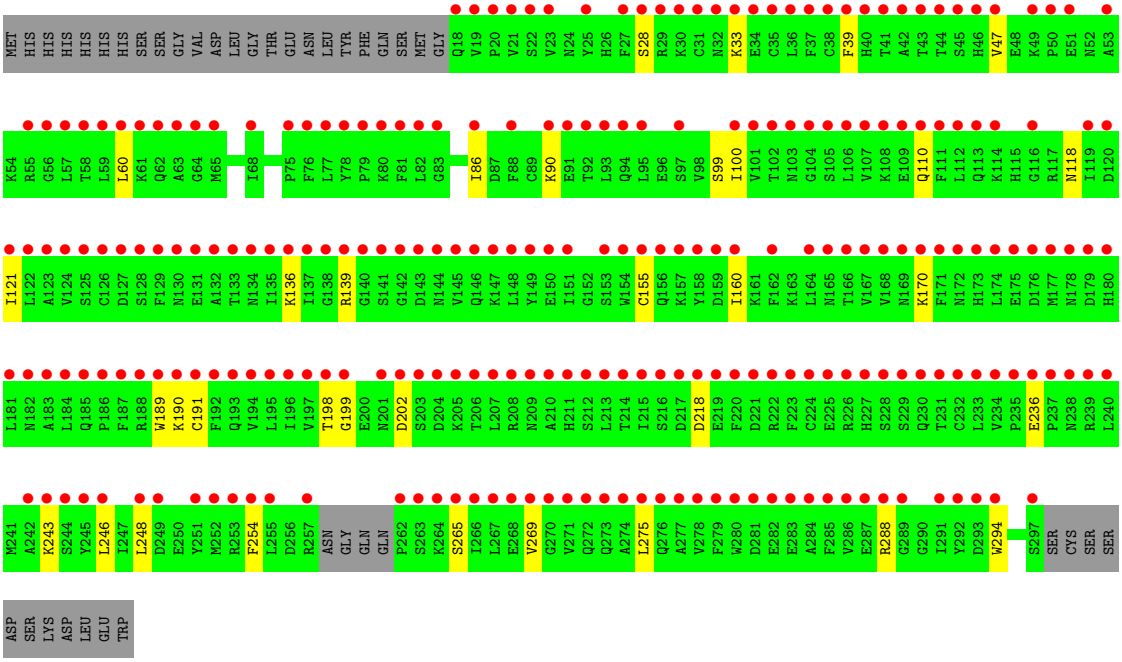
Chain B:



• Molecule 1: Radical SAM core domain-containing protein

Chain C:




MET HIS HIS HIS HIS HIS HIS SER SER GLY VAL ASP LEU GLY THR GLU ASN LEU TYR PHE GLN SER MET GLY Q18 V19 P20 V21 S22 V23 N24 Y25 H26 F27 S28 R29 K30 C31 N32 K33 E34 C35 L36 F37 C38 F39 H40 T41 A42 T43 T44 S45 H46 V47 E48 K49 P50 E51 N52 A53 K54 R55 G56 L57 T58 L59 L60 K61 Q62 A63 G64 M65 I68 P75 F76 L77 Y78 P79 K80 F81 L82 G83 I86 D87 F88 C89 K90 E91 T92 L93 Q94 L96 E96 S97 V98 S99 I100 V101 T102 N103 G104 S105 L106 V107 K108 E109 Q110 F111 L112 Q113 K114 H115 G116 R117 N118 I119 D120 I121 L122 A123 V124 S125 C126 D127 S128 F129 N130 E131 A132 T133 N134 I135 K136 I137 G138 R139 G140 S141 G142 D143 N144 V145 Q146 K147 L148 Y149 E150 I151 G152 S153 W154 C155 Q156 K157 Y158 D159 I160 K161 F162 K163 L164 N165 T166 V167 V168 N169 K170 F171 N172 H173 L174 E175 D176 M177 N178 D179 H180 L181 N182 A183 L184 Q185 P186 F187 R188 W189 K190 C191 F192 Q193 V194 L195 I196 V197 T198 G199 E200 N201 D202 S203 D204 K205 T206 L207 R208 N209 A210 H211 S212 L213 T214 I215 S216 D217 D218 E219 F220 D221 R222 F223 C224 E225 R226 H227 S228 S229 Q230 T231 C232 L233 V234 P235 E236 P237 N238 R239 L240 M241 A242 K243 S244 Y245 L246 I247 L248 D249 E250 Y251 M252 R253 F254 L255 D256 R257 ASN GLY GLN GLN P262 S263 K264 S265 I266 L267 E268 V269 G270 V271 Q272 Q273 A274 L275 Q276 A277 V278 F279 W280 D281 E282 E283 A284 F285 V286 E287 R288 G289 G290 I291 Y292 D293 W294 S297 SER CYS SER SER ASP SER LYS ASP LEU GLU TRP

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	51.57Å 80.31Å 105.61Å 90.00° 96.71° 90.00°	Depositor
Resolution (Å)	28.59 – 1.72 28.59 – 1.72	Depositor EDS
% Data completeness (in resolution range)	99.1 (28.59-1.72) 99.1 (28.59-1.72)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.67 (at 1.72Å)	Xtriage
Refinement program	REFMAC 5.8.0425	Depositor
R, R_{free}	0.261 , 0.292 0.269 , 0.298	Depositor DCC
R_{free} test set	4492 reflections (4.95%)	wwPDB-VP
Wilson B-factor (Å^2)	23.4	Xtriage
Anisotropy	0.068	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 30.9	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	7261	wwPDB-VP
Average B, all atoms (Å^2)	54.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 7.17% 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: CTP, SAM, SF4

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	0.42	0/2298	0.71	0/3098
1	B	0.42	0/2325	0.70	0/3133
1	C	0.38	0/2290	0.68	1/3086 (0.0%)
All	All	0.41	0/6913	0.69	1/9317 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	288	ARG	NE-CZ-NH2	-5.09	117.76	120.30

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	2250	0	2197	13	0
1	B	2277	0	2224	12	0
1	C	2243	0	2196	18	0
2	A	29	0	12	0	0
2	B	29	0	12	1	0
2	C	29	0	12	0	0
3	A	8	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	8	0	0	0	0
3	C	8	0	0	2	0
4	A	27	0	21	0	0
4	B	27	0	22	0	0
4	C	27	0	22	1	0
5	A	121	0	0	1	0
5	B	134	0	0	0	0
5	C	44	0	0	1	0
All	All	7261	0	6718	45	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 3.

All (45) 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)
3:C:403:SF4:FE1	3:C:403:SF4:S2	1.88	0.65
4:C:401:SAM:N	3:C:403:SF4:S2	2.71	0.63
1:C:86[B]:ILE:HD11	1:C:100:ILE:HD11	1.82	0.60
1:B:218:ASP:HB3	1:B:222:ARG:HH12	1.72	0.54
1:B:190:LYS:HE2	1:B:236:GLU:OE2	2.08	0.54
1:B:28[B]:SER:HB2	1:B:47:VAL:HG22	1.92	0.52
1:B:89:CYS:HB3	1:B:95:LEU:HD12	1.92	0.51
1:B:60:LEU:HD11	1:B:248:LEU:HD11	1.92	0.50
1:B:86:ILE:HD11	1:B:100:ILE:HD11	1.94	0.50
1:B:190:LYS:CE	1:B:236:GLU:OE2	2.59	0.50
1:C:199:GLY:N	1:C:202:ASP:OD1	2.42	0.50
1:C:170:LYS:HE2	1:C:170:LYS:HA	1.94	0.49
1:C:90:LYS:HG2	1:C:118:ASN:HA	1.95	0.48
1:C:33:LYS:NZ	1:C:139:ARG:O	2.38	0.46
1:A:190:LYS:HE2	1:A:236:GLU:OE2	2.16	0.46
1:A:86:ILE:CD1	1:A:100:ILE:HD11	2.47	0.45
1:C:190:LYS:CE	1:C:236:GLU:OE1	2.64	0.45
1:A:243:LYS:NZ	1:A:258:ASN:HB3	2.32	0.45
1:B:136:LYS:HE3	1:B:171:PHE:CZ	2.52	0.45
1:C:28[A]:SER:HB3	1:C:47:VAL:HG22	1.99	0.45
1:C:190:LYS:HE2	1:C:236:GLU:OE1	2.16	0.45
1:C:110:GLN:NE2	5:C:502:HOH:O	2.50	0.44
1:A:140:GLY:HA3	1:A:144:ASN:OD1	2.17	0.44
1:A:155:CYS:HB3	1:A:160:ILE:O	2.18	0.44
1:B:245:TYR:CD2	2:B:403:CTP:H2'	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:86[B]:ILE:CD1	1:C:100:ILE:HD11	2.47	0.44
1:A:130:ASN:OD1	1:A:132:ALA:HB3	2.18	0.44
1:C:60:LEU:HD11	1:C:248:LEU:HD11	2.01	0.43
1:A:86:ILE:HD11	1:A:100:ILE:HD11	2.01	0.43
1:A:91:GLU:OE1	1:A:117:ARG:NH2	2.50	0.43
1:A:157:LYS:HE3	1:A:158:TYR:OH	2.19	0.42
1:C:28[B]:SER:HB2	1:C:47:VAL:HG22	2.01	0.42
1:A:190:LYS:CE	1:A:236:GLU:OE2	2.67	0.42
1:C:246:LEU:HD22	1:C:275:LEU:HD11	2.01	0.42
1:B:155:CYS:HB3	1:B:160:ILE:O	2.20	0.42
1:C:155:CYS:HB3	1:C:160:ILE:O	2.20	0.42
1:C:189:TRP:CE2	1:C:191:CYS:SG	3.14	0.41
1:A:185:GLN:N	1:A:186:PRO:CD	2.83	0.41
1:C:254:PHE:CZ	1:C:275:LEU:HD13	2.56	0.41
1:B:136:LYS:HE3	1:B:171:PHE:CE2	2.55	0.41
1:C:99:SER:HA	1:C:121:ILE:O	2.20	0.41
1:C:265:SER:O	1:C:269:VAL:HG22	2.21	0.40
1:A:62:GLN:NE2	5:A:510:HOH:O	2.52	0.40
1:A:89:CYS:HB3	1:A:95:LEU:HD12	2.03	0.40
1:B:218:ASP:HB3	1:B:222:ARG:NH1	2.37	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	277/315 (88%)	270 (98%)	7 (2%)	0	100	100
1	B	281/315 (89%)	275 (98%)	6 (2%)	0	100	100
1	C	275/315 (87%)	268 (98%)	7 (2%)	0	100	100
All	All	833/945 (88%)	813 (98%)	20 (2%)	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	250/284 (88%)	244 (98%)	6 (2%)	44	25
1	B	254/284 (89%)	248 (98%)	6 (2%)	44	25
1	C	249/284 (88%)	243 (98%)	6 (2%)	44	25
All	All	753/852 (88%)	735 (98%)	18 (2%)	44	25

All (18) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	39	PHE
1	A	156	GLN
1	A	205	LYS
1	A	243	LYS
1	A	276	GLN
1	A	294	TRP
1	B	37	PHE
1	B	39	PHE
1	B	198	THR
1	B	243	LYS
1	B	276	GLN
1	B	294	TRP
1	C	39	PHE
1	C	136	LYS
1	C	198	THR
1	C	218	ASP
1	C	243	LYS
1	C	294	TRP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (6) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	62	GLN
1	A	238	ASN
1	B	173	HIS
1	B	276	GLN
1	C	110	GLN
1	C	273	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

9 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	$\#\|Z\| > 2$
2	CTP	A	401	-	29,30,30	0.80	0	43,47,47	0.96	2 (4%)
4	SAM	C	401	3	23,29,29	0.89	1 (4%)	20,42,42	1.11	2 (10%)
3	SF4	A	402	4,1	0,12,12	-	-	-		
3	SF4	C	403	4,1	0,12,12	-	-	-		
3	SF4	B	401	4,1	0,12,12	-	-	-		
4	SAM	B	402	3	23,29,29	0.86	1 (4%)	20,42,42	0.77	0
4	SAM	A	403	3	23,29,29	0.78	1 (4%)	20,42,42	1.00	1 (5%)
2	CTP	B	403	-	29,30,30	1.04	3 (10%)	43,47,47	1.08	2 (4%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
2	CTP	C	402	-	29,30,30	1.02	2 (6%)	43,47,47	0.99	3 (6%)

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	CTP	A	401	-	-	1/22/38/38	0/2/2/2
4	SAM	C	401	3	-	3/13/33/33	0/3/3/3
3	SF4	A	402	4,1	-	-	0/6/5/5
3	SF4	C	403	4,1	-	-	0/6/5/5
3	SF4	B	401	4,1	-	-	0/6/5/5
4	SAM	B	402	3	-	1/13/33/33	0/3/3/3
4	SAM	A	403	3	-	2/13/33/33	0/3/3/3
2	CTP	B	403	-	-	1/22/38/38	0/2/2/2
2	CTP	C	402	-	-	1/22/38/38	0/2/2/2

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	402	CTP	PA-O3A	3.60	1.63	1.59
2	B	403	CTP	PA-O3A	3.05	1.62	1.59
2	B	403	CTP	PG-O1G	-2.82	1.41	1.50
4	C	401	SAM	OXT-C	-2.68	1.22	1.30
4	A	403	SAM	C8-N7	-2.29	1.30	1.34
2	B	403	CTP	PB-O2B	-2.28	1.44	1.55
4	B	402	SAM	O-C	2.23	1.28	1.22
2	C	402	CTP	PG-O2G	-2.07	1.47	1.54

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	403	CTP	O2A-PA-O1A	3.23	127.47	112.44
2	A	401	CTP	O2A-PA-O1A	3.03	126.55	112.44
4	A	403	SAM	CG-SD-C5'	-2.84	96.49	103.43
2	C	402	CTP	O2A-PA-O1A	2.79	125.40	112.44
4	C	401	SAM	O3'-C3'-C2'	-2.75	103.01	111.82
2	C	402	CTP	O3A-PB-O1B	-2.66	102.72	110.70
4	C	401	SAM	O3'-C3'-C4'	2.19	117.38	111.08
2	B	403	CTP	O3A-PA-O1A	-2.09	104.42	110.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	401	CTP	O2A-PA-O3A	-2.06	101.70	107.27
2	C	402	CTP	O2B-PB-O3A	2.02	112.73	107.27

There are no chirality outliers.

All (9) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	C	401	SAM	N-CA-CB-CG
4	C	401	SAM	C-CA-CB-CG
2	B	403	CTP	PB-O3B-PG-O2G
4	B	402	SAM	C-CA-CB-CG
2	A	401	CTP	PB-O3B-PG-O1G
4	A	403	SAM	C-CA-CB-CG
2	C	402	CTP	PB-O3B-PG-O3G
4	C	401	SAM	CA-CB-CG-SD
4	A	403	SAM	CB-CG-SD-C5'

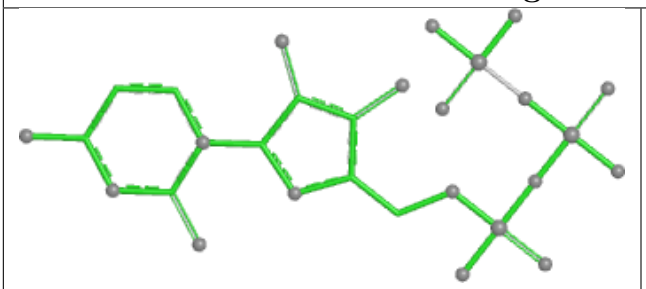
There are no ring outliers.

3 monomers are involved in 3 short contacts:

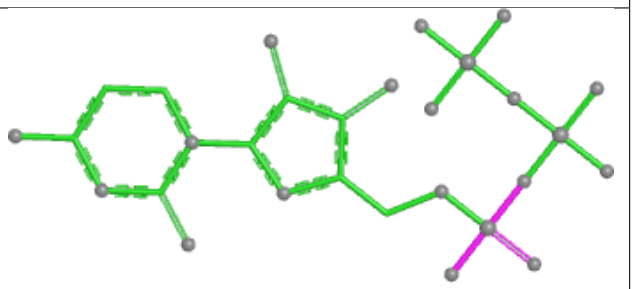
Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	C	401	SAM	1	0
3	C	403	SF4	2	0
2	B	403	CTP	1	0

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 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.

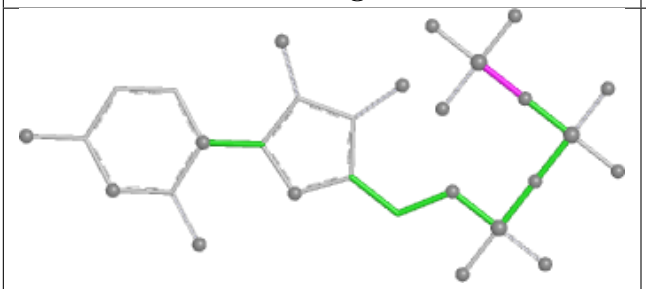
Ligand CTP A 401



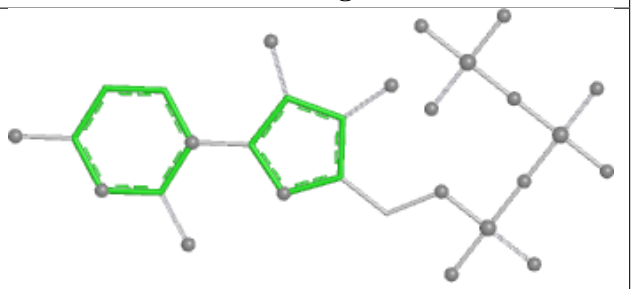
Bond lengths



Bond angles

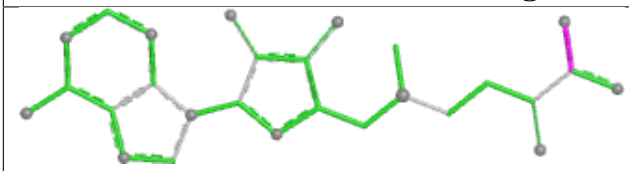


Torsions



Rings

Ligand SAM C 401



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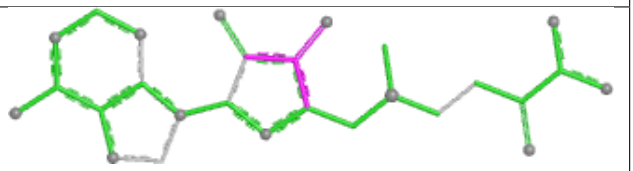

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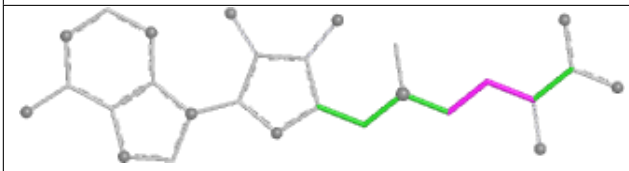

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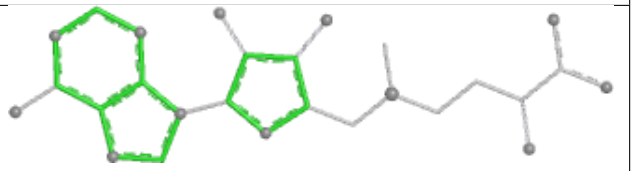
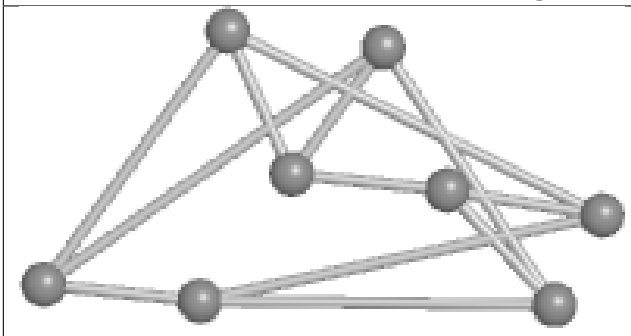
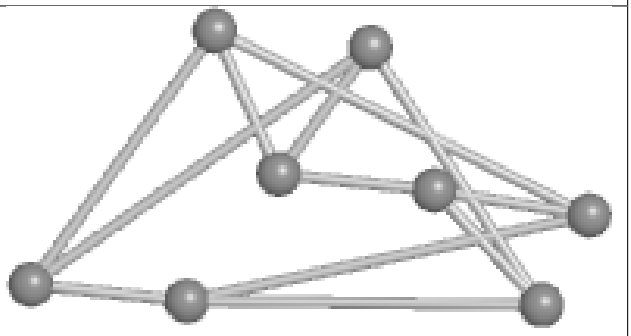


Rings

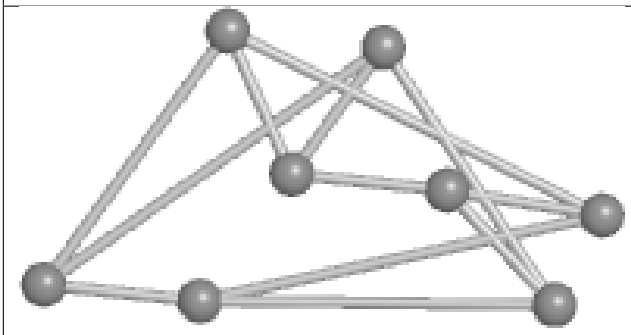
Ligand SF4 A 402



Bond lengths



Bond angles



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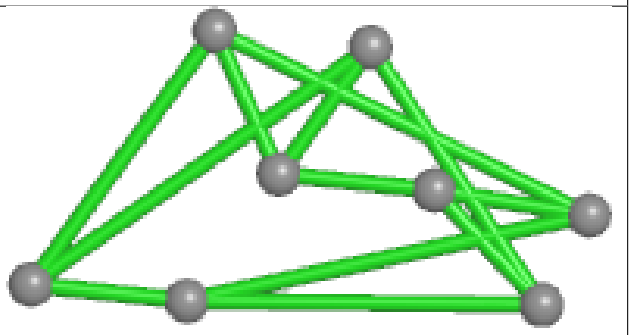
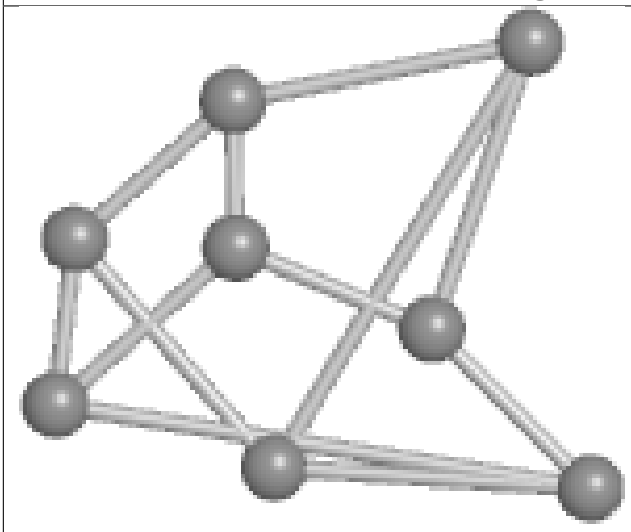
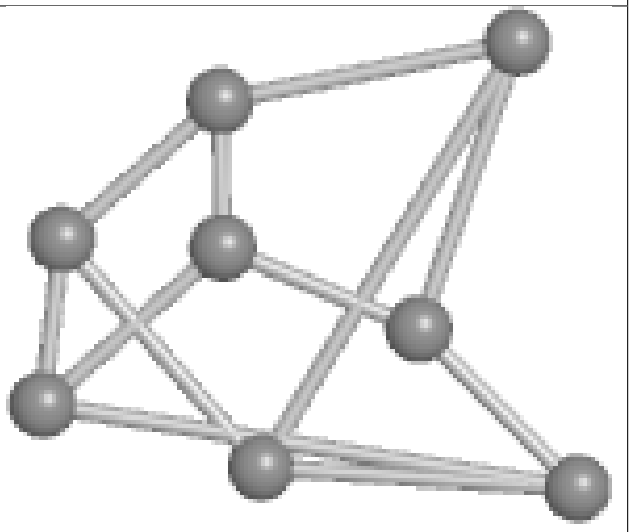


Rings

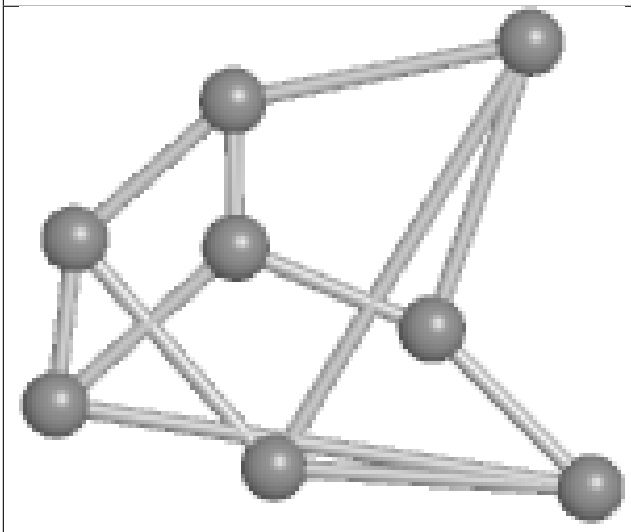
Ligand SF4 C 403



Bond lengths



Bond angles



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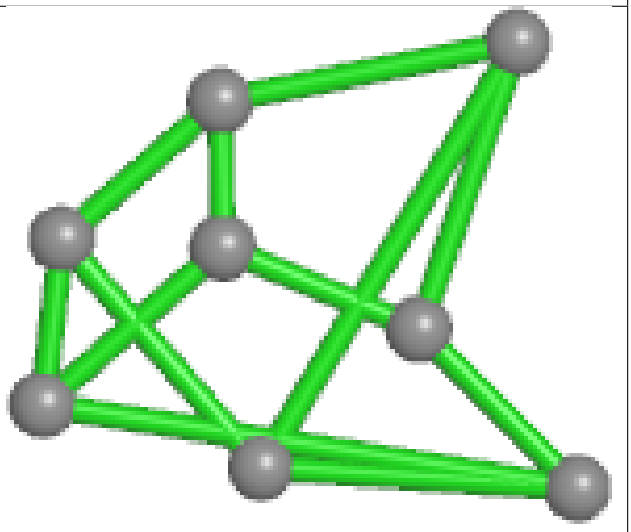
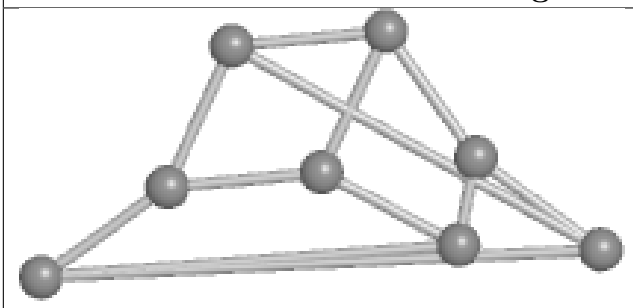


Rings

Ligand SF4 B 401



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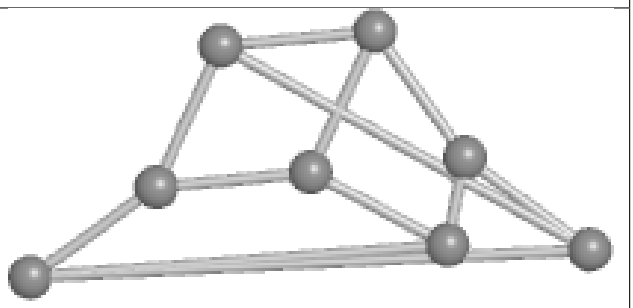
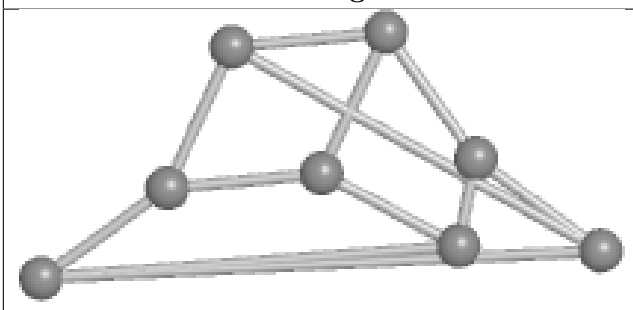


Bond angles



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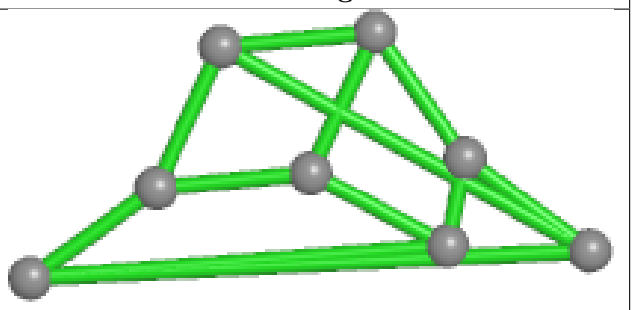
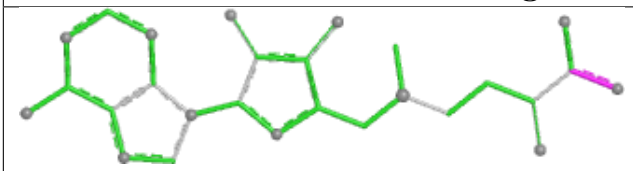


Rings

Ligand SAM B 402



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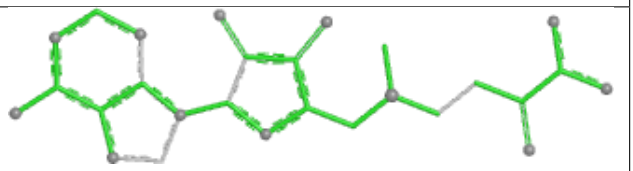

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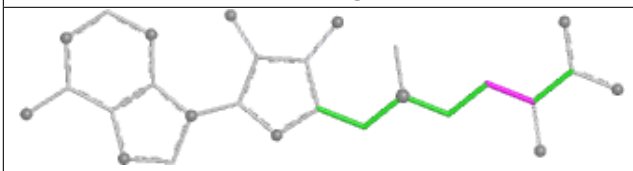

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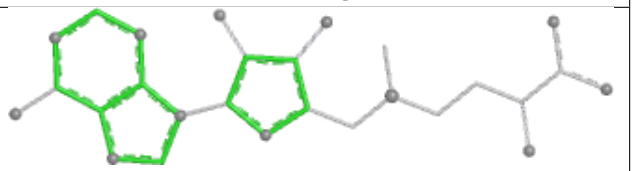
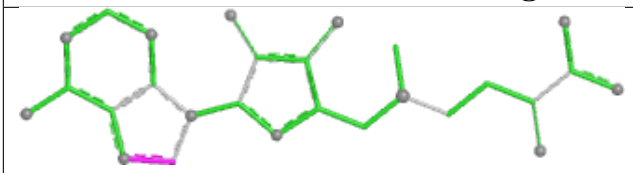
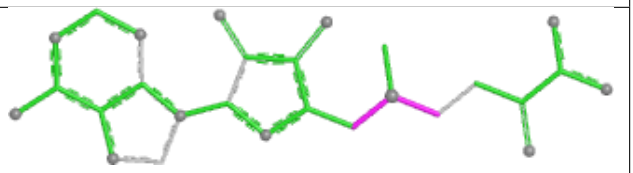


Rings

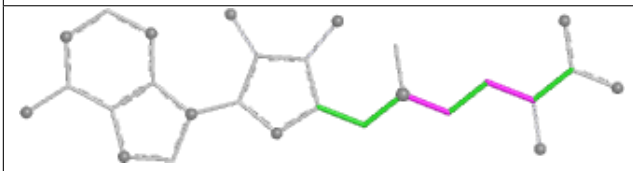
Ligand SAM A 403



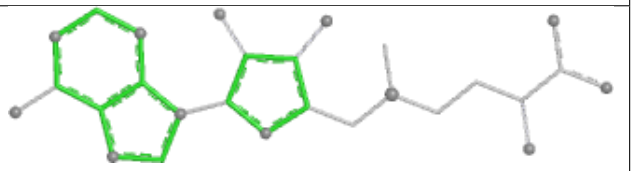
Bond lengths



Bond angles

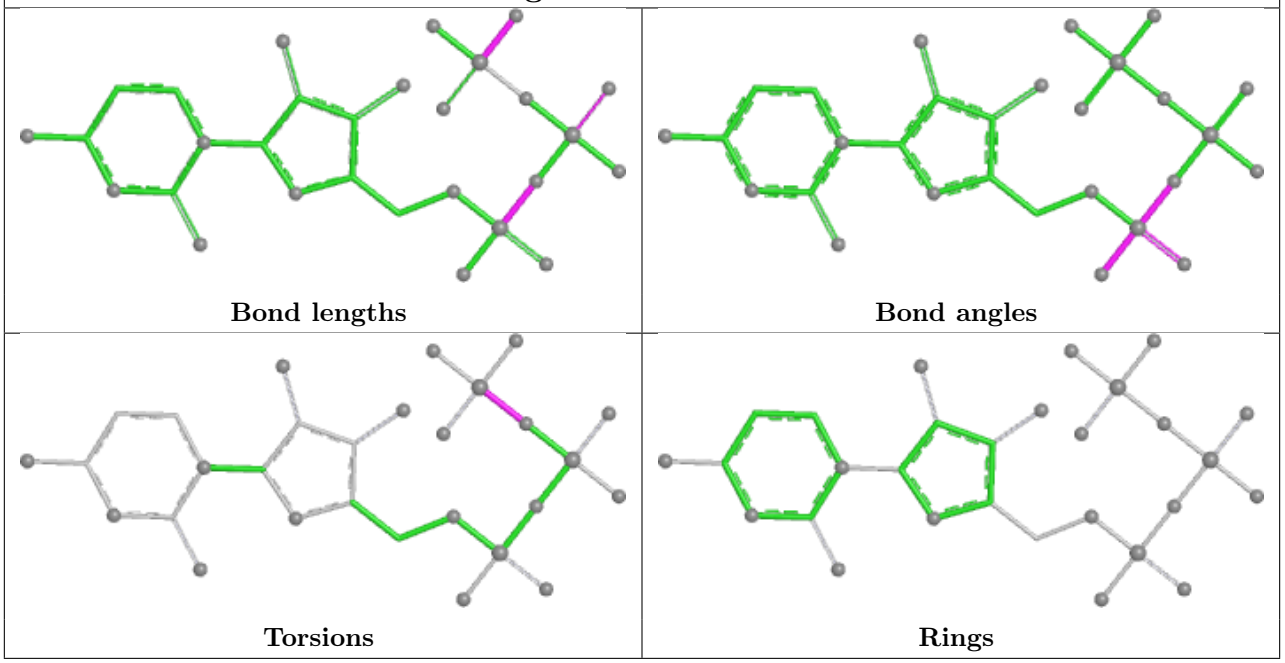


Torsions



Rings

Ligand CTP B 403



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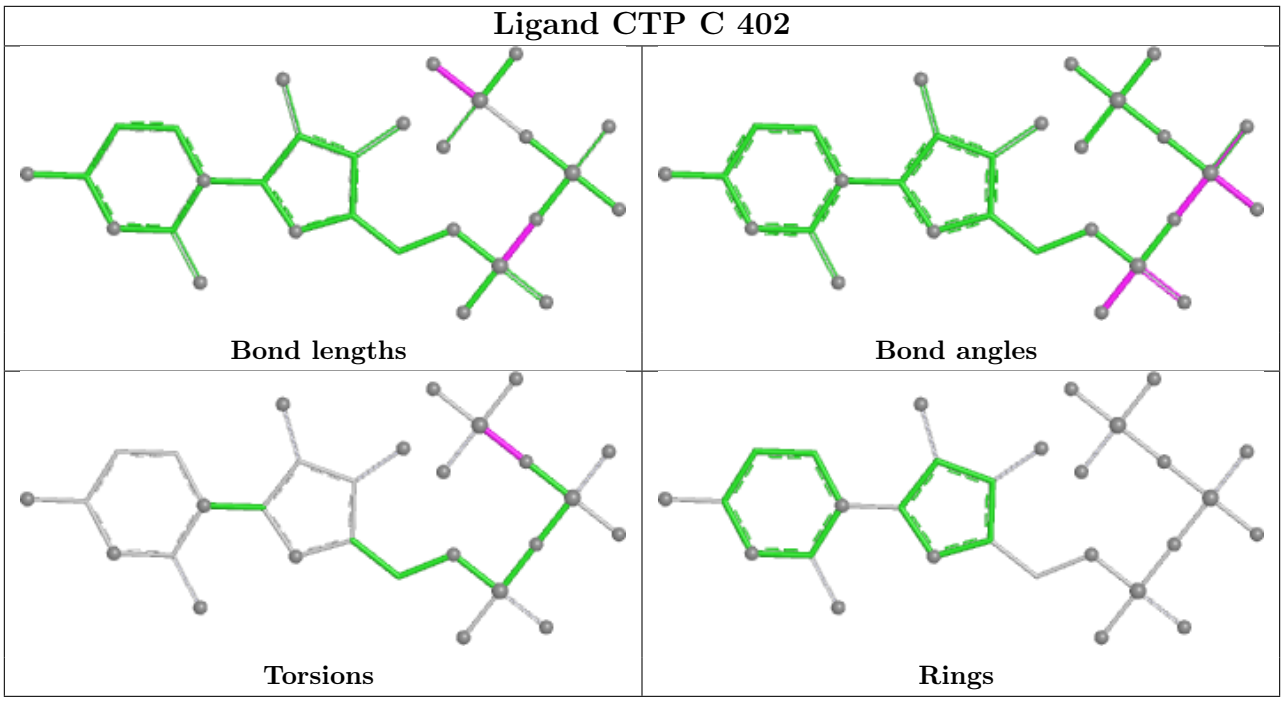

5.7 Other polymers (i)

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	279/315 (88%)	1.63	95 (34%)	1	1	25, 44, 77, 92	0
1	B	282/315 (89%)	1.61	100 (35%)	1	1	14, 45, 73, 81	1 (0%)
1	C	276/315 (87%)	3.83	242 (87%)	0	0	24, 69, 118, 134	3 (1%)
All	All	837/945 (88%)	2.35	437 (52%)	0	0	14, 52, 99, 134	4 (0%)

All (437) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	129	PHE	9.3
1	C	174	LEU	9.2
1	C	36	LEU	8.8
1	C	223	PHE	8.7
1	C	137	ILE	8.5
1	C	135	ILE	8.3
1	C	168	VAL	8.1
1	C	233	LEU	8.0
1	C	184	LEU	7.8
1	C	171	PHE	7.7
1	C	148	LEU	7.7
1	C	189	TRP	7.7
1	C	269	VAL	7.3
1	C	128	SER	7.0
1	C	37	PHE	6.9
1	C	38	CYS	6.9
1	C	130	ASN	6.9
1	C	167	VAL	6.9
1	C	132	ALA	6.7
1	C	214	THR	6.7
1	C	145	VAL	6.7
1	C	181	LEU	6.6
1	C	140	GLY	6.6

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Mol	Chain	Res	Type	RSRZ
1	C	224	CYS	6.6
1	C	126	CYS	6.6
1	C	149	TYR	6.5
1	C	175	GLU	6.4
1	C	220	PHE	6.4
1	C	191	CYS	6.3
1	C	213	LEU	6.2
1	C	154	TRP	6.2
1	C	43	THR	5.9
1	C	31	CYS	5.9
1	C	215	ILE	5.8
1	C	286	VAL	5.7
1	C	178	ASN	5.7
1	C	166	THR	5.7
1	C	136	LYS	5.6
1	C	35	CYS	5.6
1	C	227	HIS	5.5
1	C	133	THR	5.4
1	C	180	HIS	5.4
1	C	197	VAL	5.4
1	C	266	ILE	5.4
1	C	107[A]	VAL	5.3
1	C	231	THR	5.3
1	C	146	GLN	5.3
1	C	144	ASN	5.3
1	C	207	LEU	5.1
1	C	210	ALA	5.1
1	C	232	CYS	5.1
1	C	267	LEU	5.1
1	C	186	PRO	5.1
1	A	174	LEU	5.0
1	C	271	VAL	5.0
1	C	173	HIS	5.0
1	C	42	ALA	5.0
1	B	174	LEU	4.9
1	C	275	LEU	4.9
1	C	127	ASP	4.9
1	C	177	MET	4.9
1	C	194	VAL	4.9
1	B	171	PHE	4.9
1	C	172	ASN	4.9
1	C	39	PHE	4.9

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Mol	Chain	Res	Type	RSRZ
1	C	187	PHE	4.9
1	C	59	LEU	4.8
1	C	151	ILE	4.8
1	C	164	LEU	4.8
1	C	226	ARG	4.8
1	C	63	ALA	4.8
1	C	183	ALA	4.8
1	C	77	LEU	4.7
1	C	196	ILE	4.7
1	C	195	LEU	4.7
1	C	240	LEU	4.7
1	C	234	VAL	4.7
1	C	134	ASN	4.6
1	A	145	VAL	4.6
1	C	294	TRP	4.5
1	A	149	TYR	4.5
1	C	169	ASN	4.5
1	C	206	THR	4.5
1	C	278	VAL	4.5
1	C	139	ARG	4.4
1	C	19	VAL	4.4
1	C	208	ARG	4.4
1	C	60	LEU	4.4
1	C	124	VAL	4.3
1	C	229	SER	4.3
1	C	201	ASN	4.3
1	B	135	ILE	4.3
1	C	147	LYS	4.3
1	C	243	LYS	4.3
1	C	176	ASP	4.3
1	C	142	GLY	4.2
1	C	41	THR	4.2
1	C	280	TRP	4.2
1	C	162	PHE	4.2
1	C	235	PRO	4.2
1	C	251	TYR	4.2
1	C	212	SER	4.2
1	A	171	PHE	4.2
1	A	132	ALA	4.2
1	C	284	ALA	4.2
1	C	32	ASN	4.1
1	C	222	ARG	4.1

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Mol	Chain	Res	Type	RSRZ
1	C	40	HIS	4.1
1	C	216	SER	4.1
1	C	160	ILE	4.1
1	B	259	GLY	4.1
1	C	199	GLY	4.1
1	A	135	ILE	4.0
1	C	53	ALA	4.0
1	C	209	ASN	4.0
1	A	222	ARG	4.0
1	C	198	THR	4.0
1	A	269	VAL	4.0
1	C	179	ASP	4.0
1	C	56	GLY	4.0
1	C	274	ALA	4.0
1	A	129	PHE	4.0
1	B	36	LEU	4.0
1	C	170	LYS	3.9
1	C	28[A]	SER	3.9
1	C	93	LEU	3.9
1	C	270	GLY	3.9
1	B	145	VAL	3.9
1	C	225	GLU	3.9
1	C	125	SER	3.9
1	A	154	TRP	3.9
1	C	158	TYR	3.8
1	A	173	HIS	3.8
1	C	153	SER	3.8
1	A	183	ALA	3.8
1	C	156	GLN	3.8
1	C	205	LYS	3.8
1	C	192	PHE	3.8
1	B	17	GLY	3.8
1	C	228	SER	3.8
1	B	129	PHE	3.8
1	C	58	THR	3.7
1	A	182	ASN	3.7
1	C	297	SER	3.7
1	C	44	THR	3.7
1	C	254	PHE	3.7
1	C	78	TYR	3.7
1	C	202	ASP	3.7
1	C	218	ASP	3.7

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Mol	Chain	Res	Type	RSRZ
1	A	181	LEU	3.7
1	A	223	PHE	3.7
1	C	292	TYR	3.7
1	C	204	ASP	3.7
1	C	103	ASN	3.7
1	A	36	LEU	3.7
1	C	106	LEU	3.7
1	A	168	VAL	3.6
1	C	221	ASP	3.6
1	C	262	PRO	3.6
1	C	211	HIS	3.6
1	C	131	GLU	3.6
1	C	122	LEU	3.6
1	C	272	GLN	3.6
1	B	183	ALA	3.6
1	A	128	SER	3.6
1	C	203	SER	3.6
1	C	64	GLY	3.6
1	C	155	CYS	3.5
1	C	88	PHE	3.5
1	C	138	GLY	3.5
1	C	33	LYS	3.5
1	B	269	VAL	3.5
1	C	47	VAL	3.5
1	C	182	ASN	3.5
1	C	277	ALA	3.5
1	C	86[A]	ILE	3.5
1	C	289	GLY	3.5
1	B	173	HIS	3.5
1	A	231	THR	3.5
1	B	132	ALA	3.4
1	C	105	SER	3.4
1	C	104	GLY	3.4
1	C	219	GLU	3.4
1	A	133	THR	3.4
1	C	92	THR	3.4
1	C	265	SER	3.4
1	B	215	ILE	3.4
1	C	217	ASP	3.4
1	C	159	ASP	3.4
1	C	21	VAL	3.4
1	C	255	LEU	3.4

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Mol	Chain	Res	Type	RSRZ
1	C	141	SER	3.4
1	C	264	LYS	3.3
1	C	283	GLU	3.3
1	A	153	SER	3.3
1	C	34	GLU	3.3
1	B	223	PHE	3.3
1	C	238	ASN	3.3
1	C	287	GLU	3.3
1	B	273	GLN	3.3
1	B	179	ASP	3.3
1	B	213	LEU	3.3
1	B	189	TRP	3.3
1	C	45	SER	3.3
1	C	68	ILE	3.2
1	B	216	SER	3.2
1	C	50	PRO	3.2
1	B	298	SER	3.2
1	C	30	LYS	3.2
1	C	61	LYS	3.2
1	A	233	LEU	3.2
1	B	181	LEU	3.2
1	B	220	PHE	3.2
1	C	279	PHE	3.2
1	B	178	ASN	3.2
1	C	20	PRO	3.2
1	A	176	ASP	3.1
1	C	29	ARG	3.1
1	A	213	LEU	3.1
1	A	220	PHE	3.1
1	C	285	PHE	3.1
1	B	110	GLN	3.1
1	B	222	ARG	3.1
1	B	229	SER	3.1
1	B	196	ILE	3.1
1	C	121	ILE	3.1
1	A	142	GLY	3.1
1	A	229	SER	3.1
1	A	179	ASP	3.1
1	B	143	ASP	3.1
1	C	143	ASP	3.1
1	A	130	ASN	3.1
1	B	293	ASP	3.0

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Mol	Chain	Res	Type	RSRZ
1	C	23	VAL	3.0
1	C	101	VAL	3.0
1	A	295	ASN	3.0
1	B	170	LYS	3.0
1	A	110	GLN	3.0
1	B	182	ASN	3.0
1	A	184	LEU	3.0
1	C	253	ARG	3.0
1	B	156	GLN	3.0
1	A	32	ASN	3.0
1	A	148	LEU	3.0
1	B	168	VAL	3.0
1	C	62	GLN	3.0
1	A	225	GLU	3.0
1	C	268	GLU	3.0
1	C	242	ALA	3.0
1	B	231	THR	2.9
1	A	215	ILE	2.9
1	C	95	LEU	2.9
1	B	286	VAL	2.9
1	A	216	SER	2.9
1	C	76	PHE	2.9
1	C	111	PHE	2.9
1	B	154	TRP	2.9
1	B	142	GLY	2.9
1	A	117	ARG	2.9
1	C	165	ASN	2.9
1	C	248	LEU	2.9
1	C	81	PHE	2.9
1	C	230	GLN	2.9
1	B	297	SER	2.8
1	C	119	ILE	2.8
1	C	157	LYS	2.8
1	B	187	PHE	2.8
1	C	27	PHE	2.8
1	B	136	LYS	2.8
1	B	224	CYS	2.8
1	B	234	VAL	2.8
1	C	97	SER	2.8
1	C	244	SER	2.8
1	C	193	GLN	2.8
1	A	143	ASP	2.8

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Mol	Chain	Res	Type	RSRZ
1	A	180	HIS	2.8
1	C	46	HIS	2.8
1	C	79	PRO	2.8
1	B	214	THR	2.8
1	C	123	ALA	2.8
1	A	205	LYS	2.8
1	C	80	LYS	2.8
1	C	55	ARG	2.8
1	B	218	ASP	2.7
1	A	178	ASN	2.7
1	B	198	THR	2.7
1	C	237	PRO	2.7
1	A	234	VAL	2.7
1	A	158	TYR	2.7
1	A	170	LYS	2.7
1	B	296	LYS	2.7
1	A	138	GLY	2.7
1	B	140	GLY	2.7
1	A	162	PHE	2.7
1	A	196	ILE	2.7
1	B	210	ALA	2.7
1	C	51	GLU	2.7
1	A	227	HIS	2.7
1	C	273	GLN	2.7
1	A	59	LEU	2.7
1	B	184	LEU	2.7
1	C	112	LEU	2.7
1	C	108	LYS	2.7
1	A	151	ILE	2.7
1	A	277	ALA	2.7
1	A	167	VAL	2.7
1	A	189	TRP	2.7
1	B	158	TYR	2.7
1	A	261	GLN	2.7
1	C	110	GLN	2.7
1	A	228	SER	2.7
1	C	293	ASP	2.6
1	B	137	ILE	2.6
1	C	22	SER	2.6
1	C	239	ARG	2.6
1	C	150	GLU	2.6
1	B	260	GLN	2.6

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Mol	Chain	Res	Type	RSRZ
1	A	284	ALA	2.6
1	C	83	GLY	2.6
1	C	257	ARG	2.6
1	C	263	SER	2.6
1	C	120	ASP	2.6
1	B	37	PHE	2.6
1	A	226	ARG	2.6
1	B	275	LEU	2.6
1	C	246	LEU	2.6
1	C	245	TYR	2.6
1	B	258	ASN	2.6
1	B	133	THR	2.6
1	B	270	GLY	2.6
1	B	105	SER	2.6
1	A	293	ASP	2.5
1	B	130	ASN	2.5
1	C	190	LYS	2.5
1	C	82	LEU	2.5
1	A	218	ASP	2.5
1	B	226	ARG	2.5
1	B	256	ASP	2.5
1	C	236	GLU	2.5
1	B	153	SER	2.5
1	C	185	GLN	2.5
1	C	188	ARG	2.5
1	A	212	SER	2.5
1	C	25	TYR	2.5
1	A	221	ASP	2.5
1	A	209	ASN	2.5
1	B	233	LEU	2.4
1	B	160	ILE	2.4
1	C	102	THR	2.4
1	B	172	ASN	2.4
1	B	227	HIS	2.4
1	C	57	LEU	2.4
1	B	141	SER	2.4
1	A	185	GLN	2.4
1	A	160	ILE	2.4
1	A	194	VAL	2.4
1	C	113	GLN	2.4
1	C	116	GLY	2.4
1	A	187	PHE	2.4

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Mol	Chain	Res	Type	RSRZ
1	B	176	ASP	2.4
1	B	32	ASN	2.4
1	C	90	LYS	2.4
1	B	186	PRO	2.4
1	A	286	VAL	2.4
1	A	177	MET	2.3
1	B	112	LEU	2.3
1	B	155	CYS	2.3
1	A	94	GLN	2.3
1	C	94	GLN	2.3
1	A	235	PRO	2.3
1	C	282	GLU	2.3
1	A	204	ASP	2.3
1	C	288	ARG	2.3
1	A	146	GLN	2.3
1	B	276	GLN	2.3
1	B	237	PRO	2.3
1	C	249	ASP	2.3
1	B	205	LYS	2.3
1	A	164	LEU	2.3
1	B	212	SER	2.3
1	C	75	PRO	2.2
1	A	257	ARG	2.2
1	A	175	GLU	2.2
1	B	149	TYR	2.2
1	A	159	ASP	2.2
1	A	172	ASN	2.2
1	A	156	GLN	2.2
1	A	230	GLN	2.2
1	A	276	GLN	2.2
1	B	261	GLN	2.2
1	B	283	GLU	2.2
1	C	109	GLU	2.2
1	C	291	ILE	2.2
1	A	210	ALA	2.2
1	C	49	LYS	2.2
1	C	114	LYS	2.2
1	B	239	ARG	2.2
1	A	106	LEU	2.2
1	A	116	GLY	2.2
1	B	274	ALA	2.2
1	B	62	GLN	2.2

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Mol	Chain	Res	Type	RSRZ
1	C	91	GLU	2.2
1	C	276	GLN	2.2
1	A	224	CYS	2.2
1	C	252	MET	2.1
1	B	264	LYS	2.1
1	C	18	GLN	2.1
1	B	162	PHE	2.1
1	A	211	HIS	2.1
1	B	59	LEU	2.1
1	B	107	VAL	2.1
1	B	148	LEU	2.1
1	B	128	SER	2.1
1	B	203	SER	2.1
1	A	150	GLU	2.1
1	A	169	ASN	2.1
1	B	266	ILE	2.1
1	C	100	ILE	2.1
1	C	65	MET	2.1
1	B	131	GLU	2.1
1	A	141	SER	2.1
1	A	259	GLY	2.1
1	B	271	VAL	2.1
1	B	166	THR	2.0
1	A	268	GLU	2.0
1	B	108	LYS	2.0
1	B	157	LYS	2.0
1	A	199	GLY	2.0
1	B	138	GLY	2.0
1	A	28	SER	2.0
1	B	221	ASP	2.0
1	C	281	ASP	2.0
1	B	194	VAL	2.0
1	A	136	LYS	2.0
1	A	272	GLN	2.0
1	B	146	GLN	2.0
1	B	291	ILE	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)

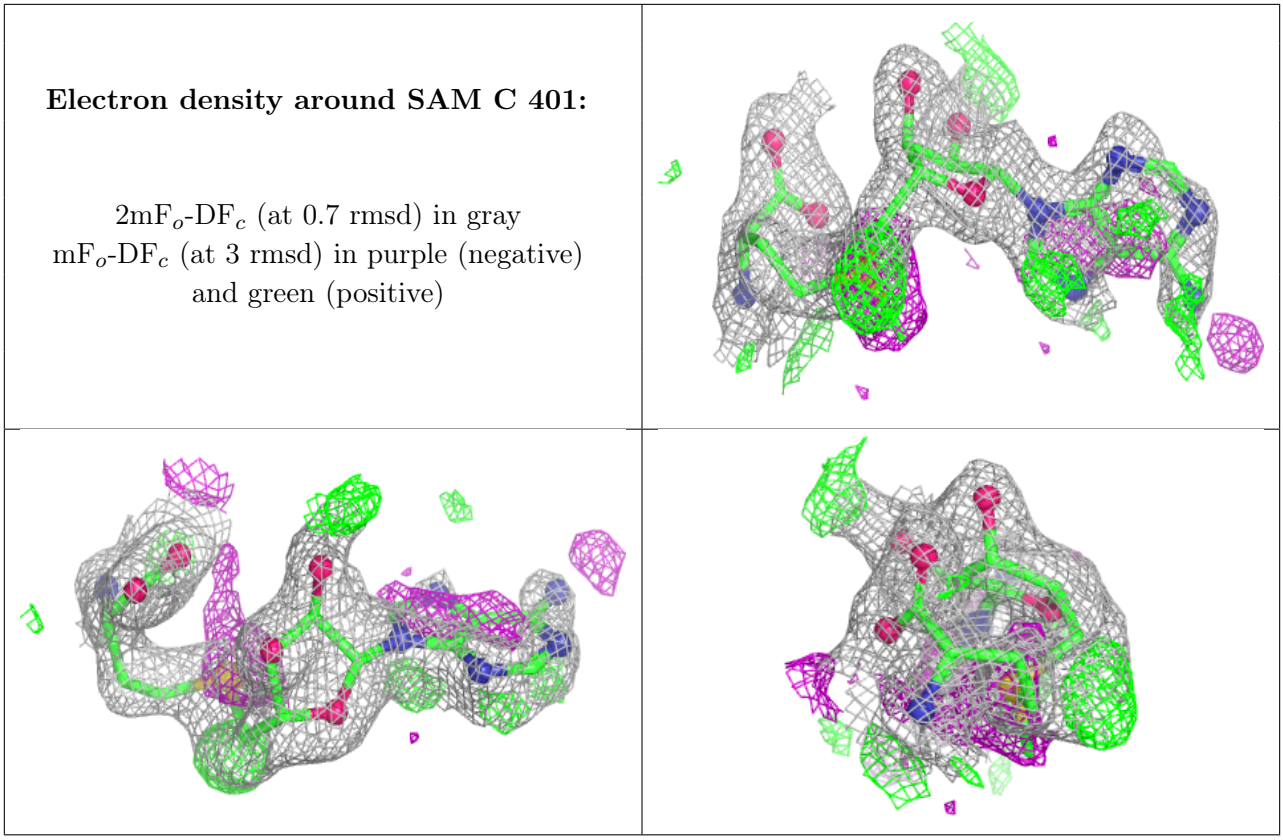
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' 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
4	SAM	C	401	27/27	0.73	0.22	46,51,60,64	0
3	SF4	C	403	8/8	0.87	0.16	56,61,65,67	0
4	SAM	B	402	27/27	0.89	0.12	27,31,38,40	0
4	SAM	A	403	27/27	0.92	0.10	27,31,35,37	0
2	CTP	C	402	29/29	0.95	0.11	40,43,49,51	0
2	CTP	B	403	29/29	0.96	0.08	26,29,33,36	0
2	CTP	A	401	29/29	0.96	0.08	25,27,30,32	0
3	SF4	A	402	8/8	0.99	0.04	30,33,36,36	0
3	SF4	B	401	8/8	0.99	0.04	31,34,36,37	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.

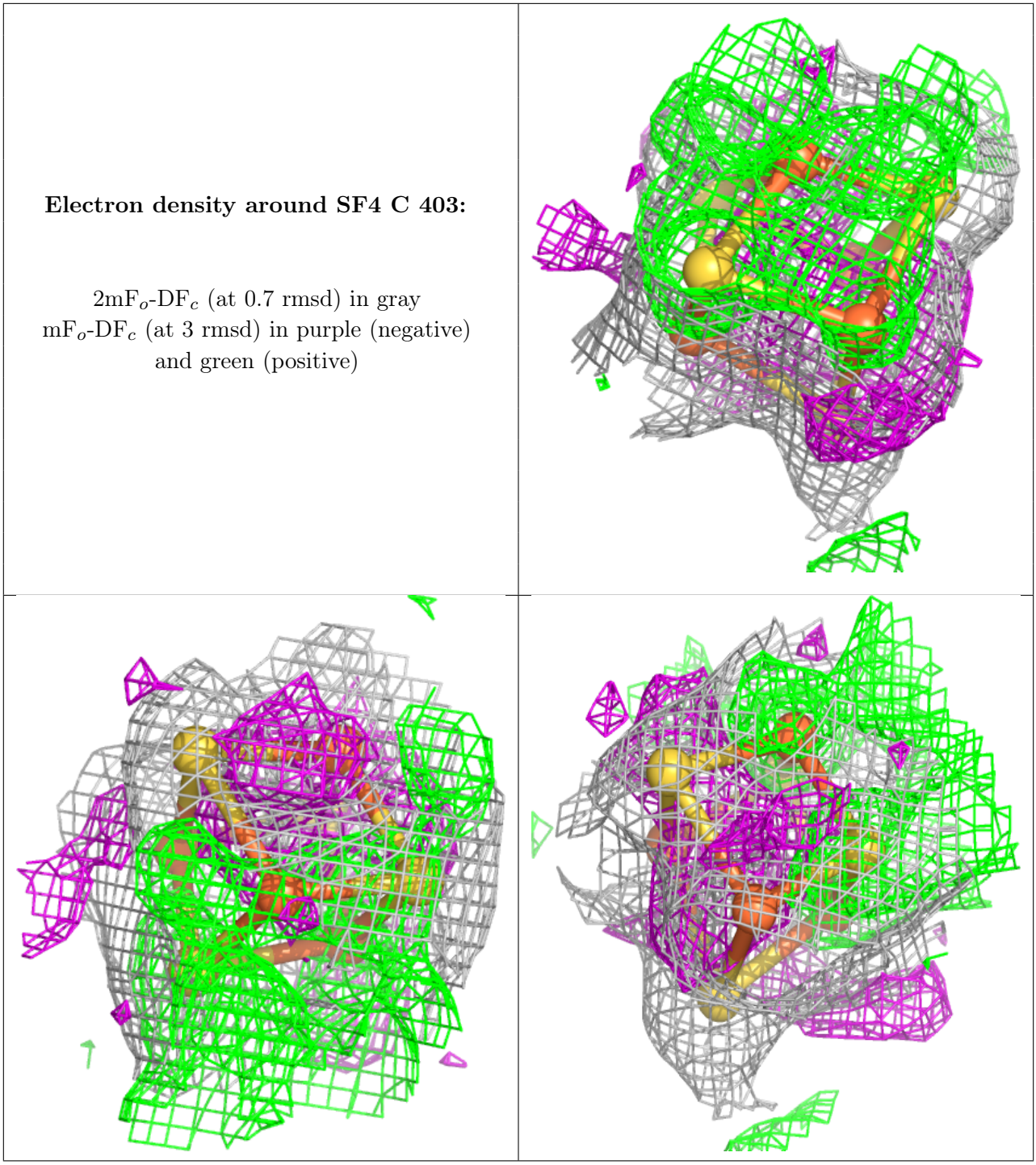
Electron density around SAM C 401:

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



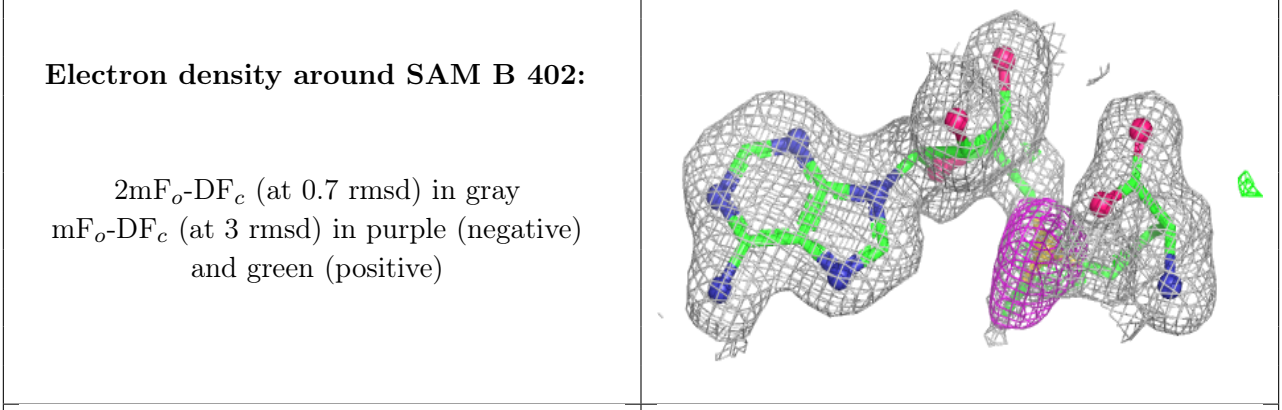
Electron density around SF4 C 403:

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



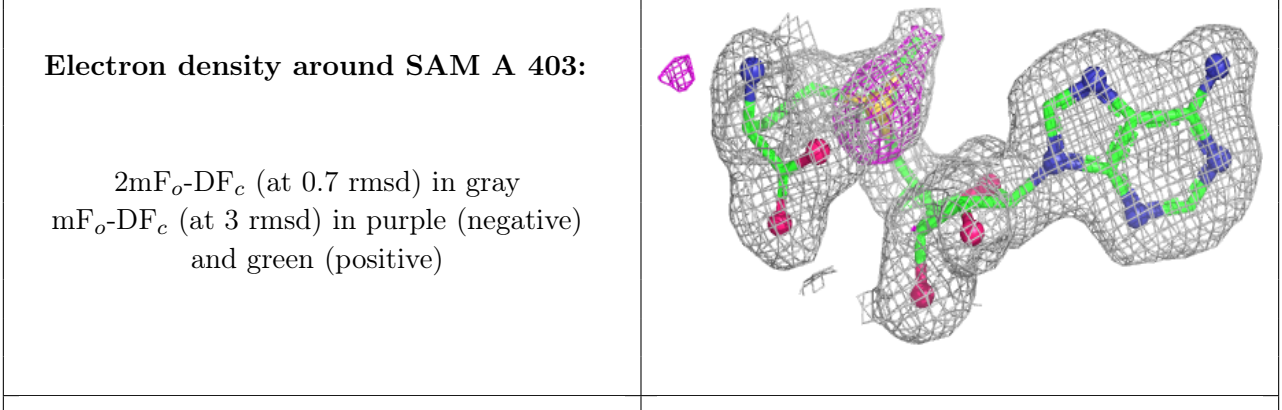
Electron density around SAM B 402:

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



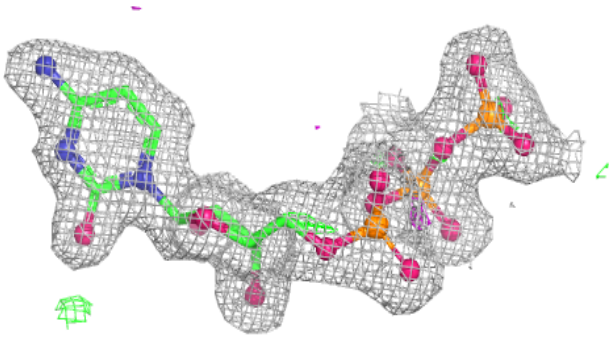
Electron density around SAM A 403:

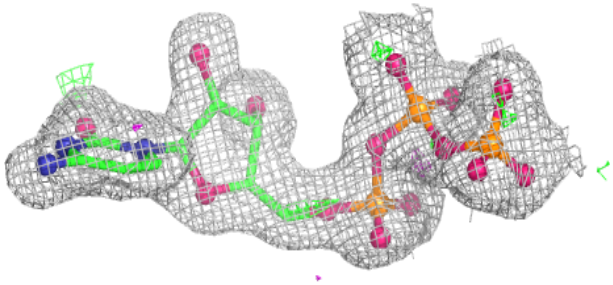
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

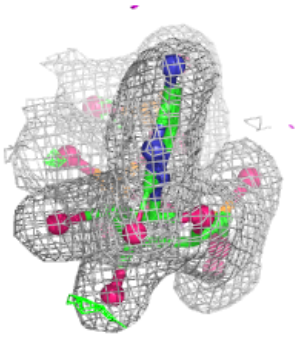


Electron density around CTP C 402:

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

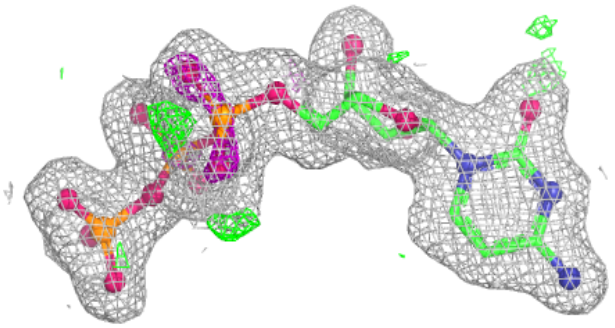


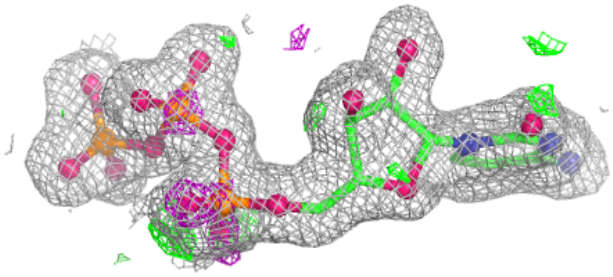


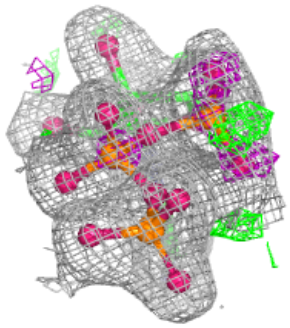


Electron density around CTP B 403:

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

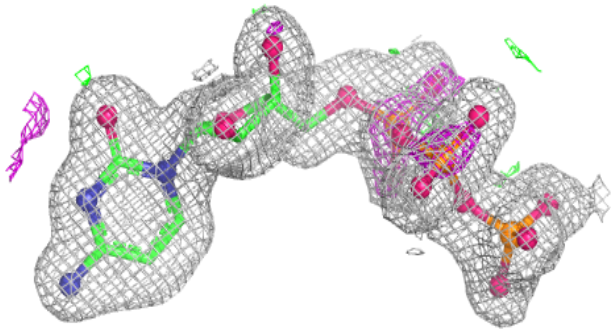


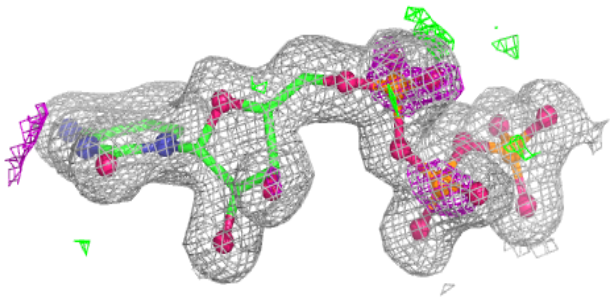


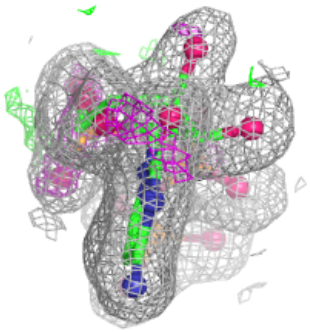


Electron density around CTP A 401:

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

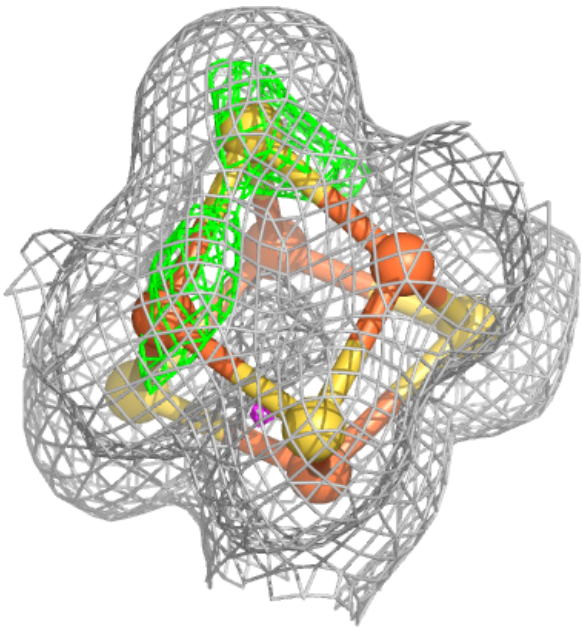


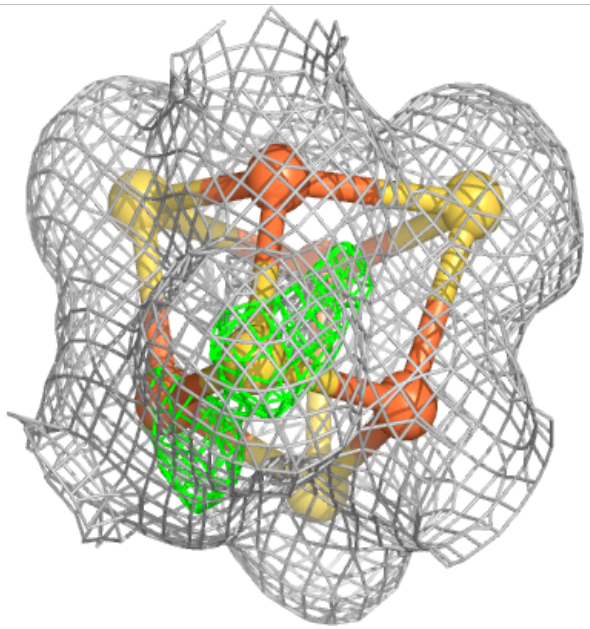


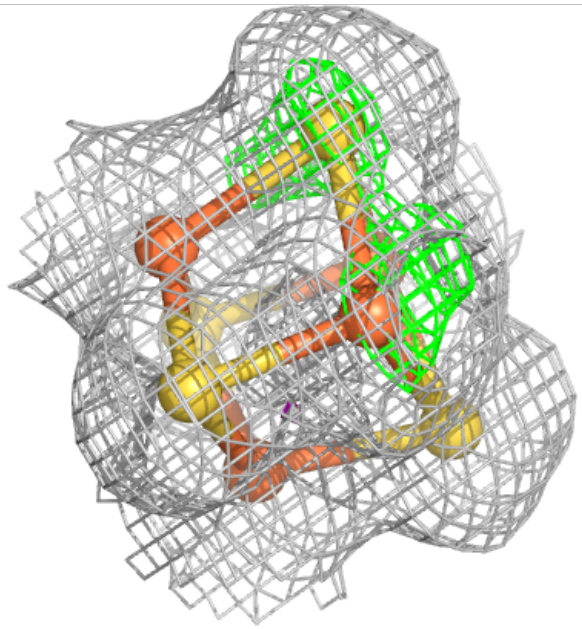


Electron density around SF4 A 402:

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

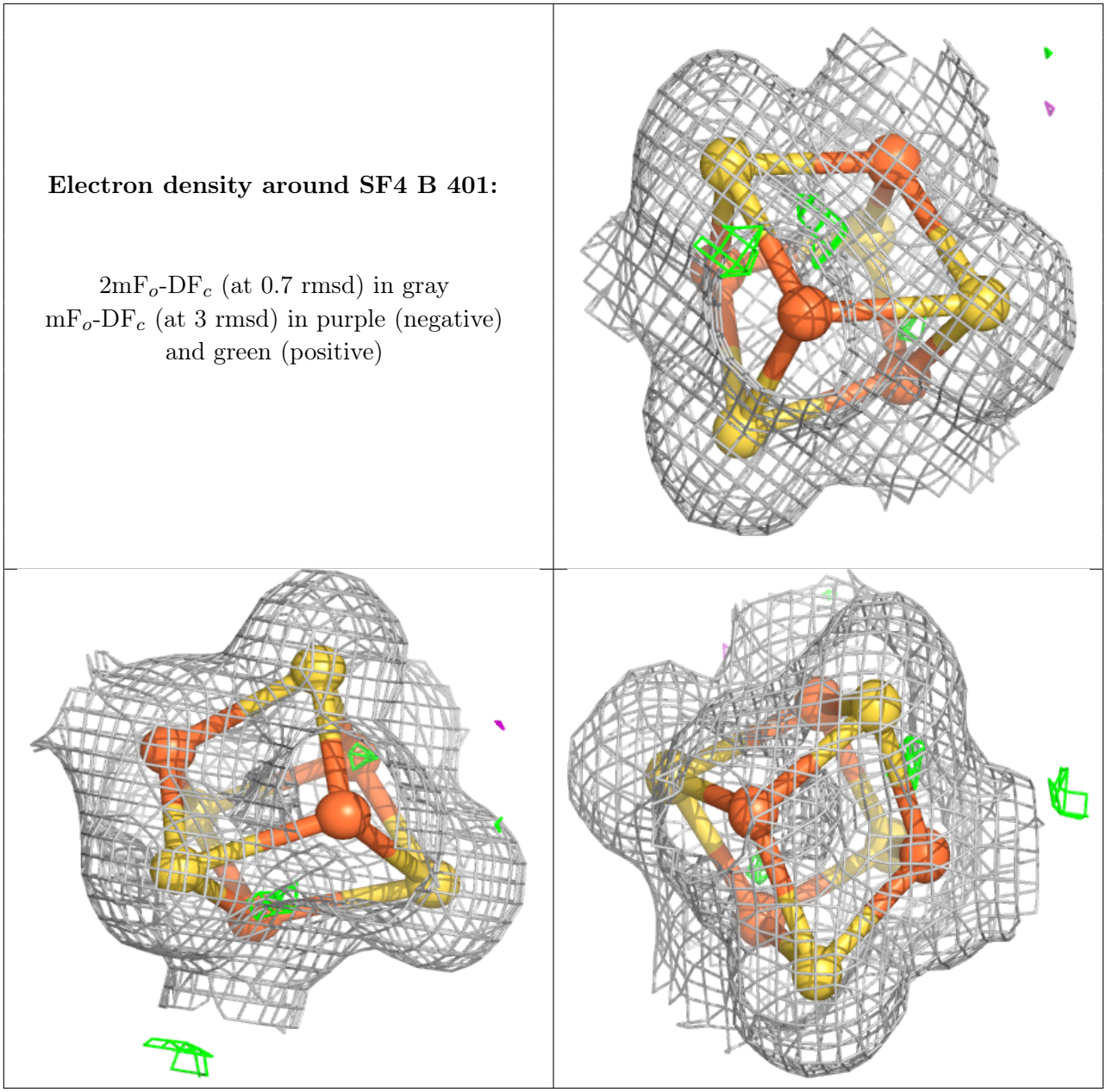






Electron density around SF4 B 401:

$2mF_o$-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.