Full wwPDB X-ray Structure Validation Report ⓘ

Sep 26, 2023 – 11:19 AM EDT

PDB ID	:	6CIQ
Title	:	Pyruvate:ferredoxin oxidoreductase from Moorella thermoacetica with coenzyme A bound
Authors	:	Chen, P.Y.-T.; Drennan, C.L.
Deposited on	:	2018-02-24
Resolution	:	3.30 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:

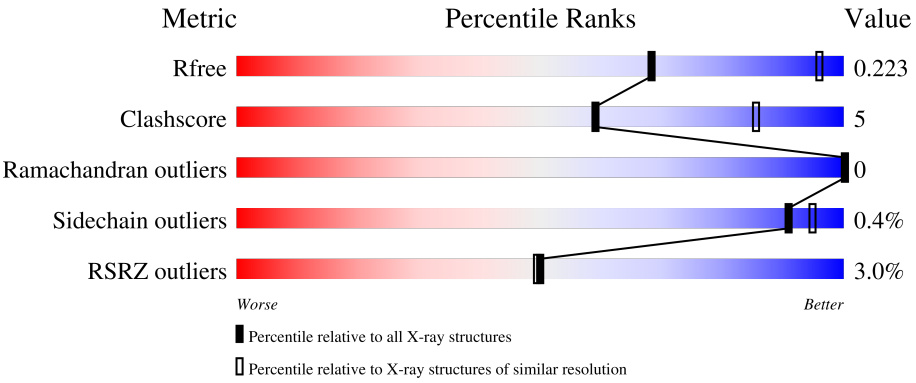
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35.1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh &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

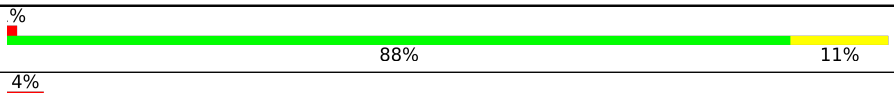
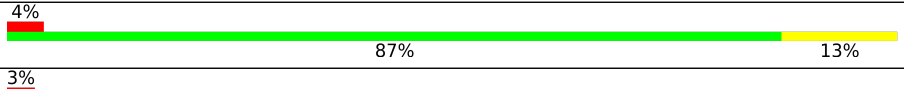
The reported resolution of this entry is 3.30 Å.

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	1149 (3.34-3.26)
Clashscore	141614	1205 (3.34-3.26)
Ramachandran outliers	138981	1183 (3.34-3.26)
Sidechain outliers	138945	1182 (3.34-3.26)
RSRZ outliers	127900	1115 (3.34-3.26)

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	1171	
1	B	1171	
1	C	1171	

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
2	SF4	B	1201	-	-	X	-

2 Entry composition

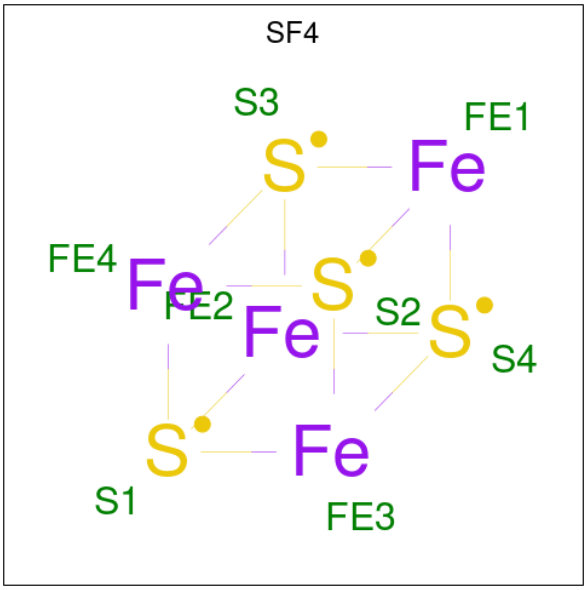
There are 6 unique types of molecules in this entry. The entry contains 26915 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 PYRUVATE-FERREDOXIN OXIDOREDUCTASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	1169	Total	C	N	O	S	0	0	0
			8893	5659	1509	1682	43			
1	B	1166	Total	C	N	O	S	0	0	0
			8860	5643	1506	1668	43			
1	C	1161	Total	C	N	O	S	0	0	0
			8836	5628	1499	1665	44			

- Molecule 2 is IRON/SULFUR CLUSTER (three-letter code: SF4) (formula: Fe_4S_4).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	Fe	S		0	0
			8	4	4			
2	A	1	Total	Fe	S		0	0
			8	4	4			
2	A	1	Total	Fe	S		0	0
			8	4	4			

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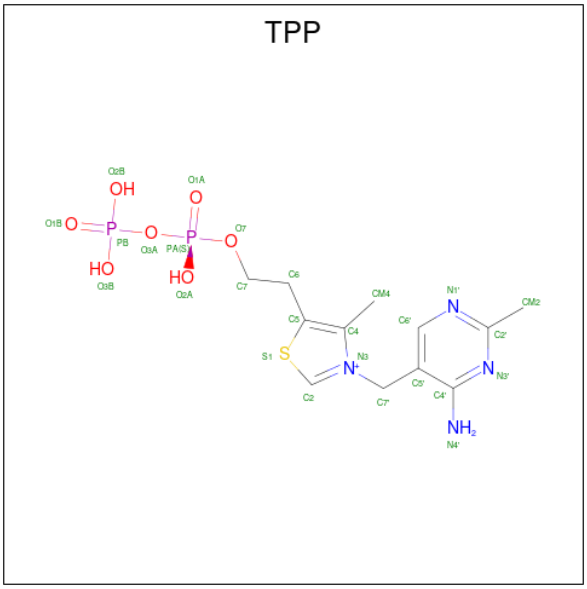
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	B	1	Total Fe S 8 4 4	0	0
2	B	1	Total Fe S 8 4 4	0	0
2	B	1	Total Fe S 8 4 4	0	0
2	C	1	Total Fe S 8 4 4	0	0
2	C	1	Total Fe S 8 4 4	0	0
2	C	1	Total Fe S 8 4 4	0	0

- Molecule 3 is THIAMINE DIPHOSPHATE (three-letter code: TPP) (formula: $C_{12}H_{19}N_4O_7P_2S$).

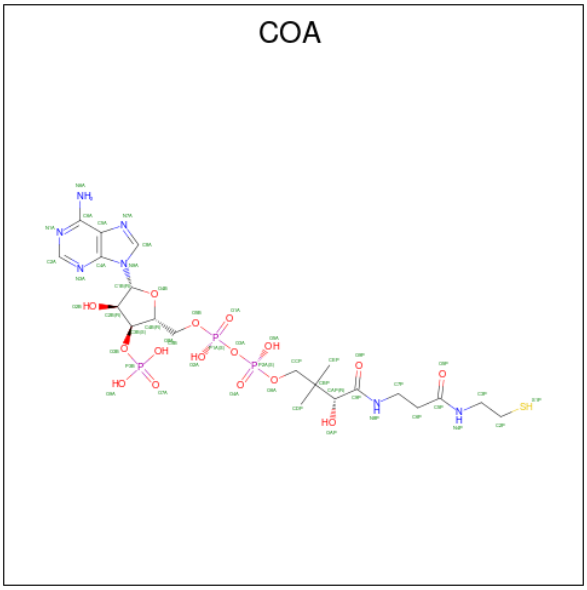


Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total C N O P S 26 12 4 7 2 1	0	0
3	B	1	Total C N O P S 26 12 4 7 2 1	0	0
3	C	1	Total C N O P S 26 12 4 7 2 1	0	0

- Molecule 4 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total Mg 1 1	0	0
4	B	1	Total Mg 1 1	0	0
4	C	1	Total Mg 1 1	0	0

- Molecule 5 is COENZYME A (three-letter code: COA) (formula: $C_{21}H_{36}N_7O_{16}P_3S$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	1	Total C N O P S 48 21 7 16 3 1	0	0
5	B	1	Total C N O P S 48 21 7 16 3 1	0	0
5	C	1	Total C N O P S 48 21 7 16 3 1	0	0

- Molecule 6 is water.

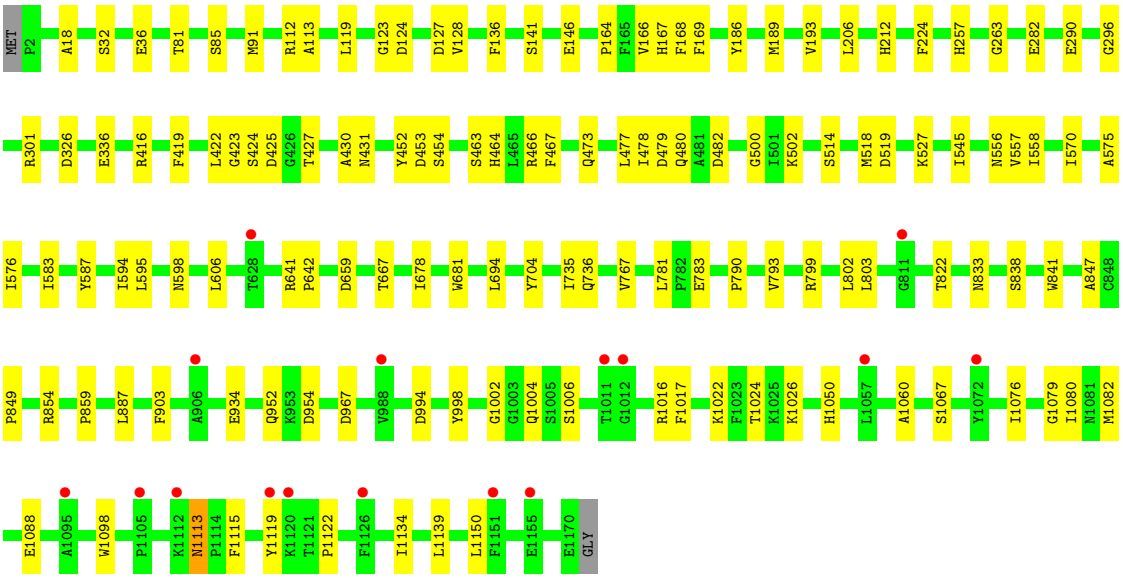
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	12	Total O 12 12	0	0
6	B	9	Total O 9 9	0	0
6	C	8	Total O 8 8	0	0

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.

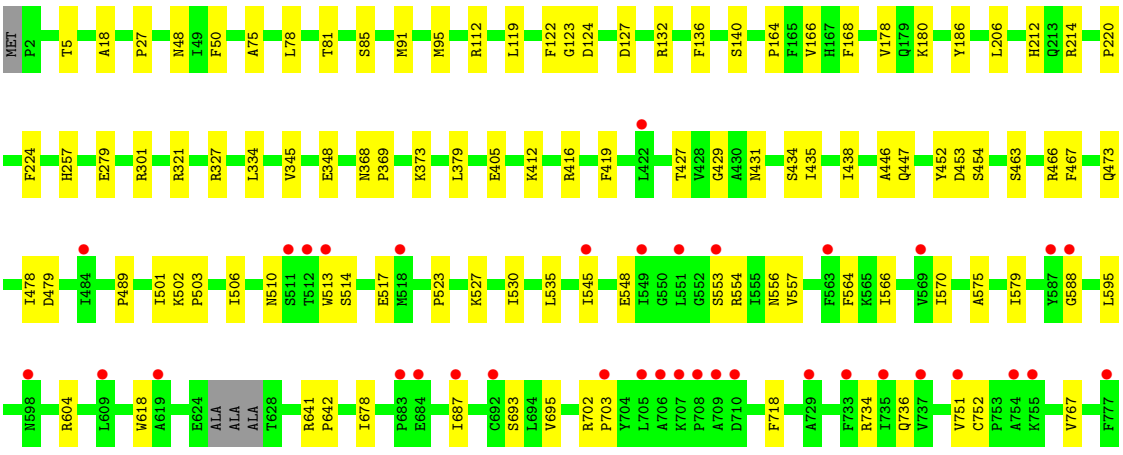
• Molecule 1: PYRUVATE-FERREDOXIN OXIDOREDUCTASE

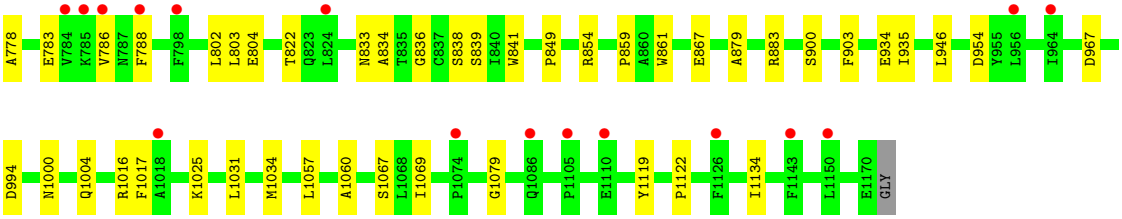
Chain A:



• Molecule 1: PYRUVATE-FERREDOXIN OXIDOREDUCTASE

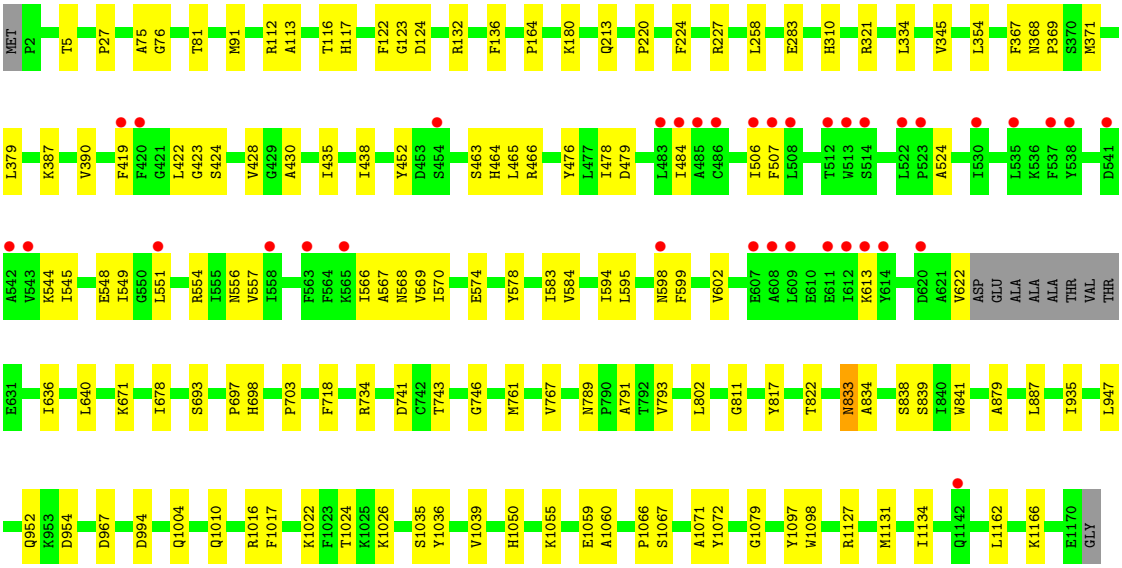
Chain B:





• Molecule 1: PYRUVATE-FERREDOXIN OXIDOREDUCTASE

Chain C:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	337.71Å 106.99Å 120.47Å 90.00° 109.85° 90.00°	Depositor
Resolution (Å)	80.25 – 3.30 80.25 – 3.30	Depositor EDS
% Data completeness (in resolution range)	96.5 (80.25-3.30) 96.5 (80.25-3.30)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.16	Depositor
$< I/\sigma(I) >$ [1]	2.25 (at 3.33Å)	Xtriage
Refinement program	PHENIX (1.13_2998: ???)	Depositor
R, R_{free}	0.184 , 0.223 0.184 , 0.223	Depositor DCC
R_{free} test set	2951 reflections (5.02%)	wwPDB-VP
Wilson B-factor (Å^2)	76.8	Xtriage
Anisotropy	0.643	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.31 , 70.2	EDS
L-test for twinning[2]	$< \|L\| > = 0.46$, $< L^2 > = 0.28$	Xtriage
Estimated twinning fraction	0.033 for -h-2*l,-k,l	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	26915	wwPDB-VP
Average B, all atoms (Å^2)	94.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.81% 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: COA, TPP, SF4, MG

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\| > 5$	RMSZ	$\#\|Z\| > 5$
1	A	0.27	0/9086	0.44	0/12325
1	B	0.26	0/9054	0.44	0/12283
1	C	0.26	0/9030	0.44	0/12251
All	All	0.26	0/27170	0.44	0/36859

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	8893	0	8795	78	0
1	B	8860	0	8740	93	0
1	C	8836	0	8726	89	0
2	A	24	0	0	0	0
2	B	24	0	0	2	0
2	C	24	0	0	0	0
3	A	26	0	16	0	0
3	B	26	0	16	2	0
3	C	26	0	16	0	0
4	A	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	B	1	0	0	0	0
4	C	1	0	0	0	0
5	A	48	0	32	2	0
5	B	48	0	32	2	0
5	C	48	0	32	4	0
6	A	12	0	0	0	0
6	B	9	0	0	1	0
6	C	8	0	0	0	0
All	All	26915	0	26405	250	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 5.

All (250) 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:802:LEU:HB2	1:A:822:THR:HB	1.68	0.75
1:C:430:ALA:HB2	1:C:556:ASN:HB2	1.69	0.72
1:C:802:LEU:HB2	1:C:822:THR:HB	1.73	0.71
1:C:419:PHE:HB2	1:C:463:SER:HB2	1.73	0.69
1:B:419:PHE:HB2	1:B:463:SER:HB2	1.74	0.68
1:B:345:VAL:HB	1:C:334:LEU:HD21	1.75	0.68
1:B:427:THR:O	1:B:431:ASN:ND2	2.27	0.67
1:B:802:LEU:HB2	1:B:822:THR:HB	1.77	0.65
1:C:793:VAL:HG21	1:C:1050:HIS:HB3	1.80	0.64
1:B:348:GLU:OE1	1:C:387:LYS:NZ	2.32	0.63
1:B:588:GLY:HA2	1:B:595:LEU:HD21	1.82	0.62
1:A:290:GLU:OE2	1:B:412:LYS:HD3	2.01	0.61
1:A:141:SER:HG	1:A:167:HIS:HE2	1.49	0.60
1:A:1079:GLY:HA3	1:A:1134:ILE:HB	1.84	0.60
1:C:1055:LYS:HE2	1:C:1059:GLU:OE2	2.01	0.60
1:C:569:VAL:HG12	1:C:570:ILE:HG13	1.83	0.60
1:C:479:ASP:OD1	1:C:479:ASP:N	2.35	0.60
1:C:435:ILE:HD11	1:C:465:LEU:HB3	1.85	0.59
1:C:428:VAL:HG11	1:C:452:TYR:HE1	1.70	0.57
1:B:967:ASP:HB3	1:B:994:ASP:HA	1.87	0.57
1:A:1022:LYS:NZ	1:A:1024:THR:O	2.33	0.57
1:A:282:GLU:OE2	1:A:473:GLN:NE2	2.36	0.56
1:A:1026:LYS:HZ3	1:A:1098:TRP:HZ3	1.53	0.56
1:B:702:ARG:NH2	1:B:804:GLU:OE1	2.34	0.56
1:B:81:THR:HG21	1:B:91:MET:HE1	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:479:ASP:OD1	1:B:479:ASP:N	2.36	0.55
1:C:368:ASN:HB2	1:C:369:PRO:HD2	1.89	0.55
1:B:553:SER:OG	1:B:554:ARG:NH1	2.39	0.55
1:B:1060:ALA:HB1	1:B:1067:SER:HB3	1.88	0.55
1:B:570:ILE:HG23	1:B:575:ALA:HB2	1.89	0.55
1:A:967:ASP:HB3	1:A:994:ASP:HA	1.87	0.54
1:C:466:ARG:NH1	1:C:478:ILE:HA	2.23	0.54
1:B:513:TRP:HA	1:B:517:GLU:OE2	2.06	0.54
1:B:883:ARG:NH1	1:C:76:GLY:O	2.41	0.54
1:C:5:THR:HG22	1:C:180:LYS:HB2	1.90	0.54
1:C:438:ILE:HD12	1:C:569:VAL:HG11	1.90	0.54
1:A:1060:ALA:HB1	1:A:1067:SER:HB3	1.91	0.53
1:B:678:ILE:HD11	1:B:767:VAL:HG23	1.91	0.53
1:B:368:ASN:HB2	1:B:369:PRO:HD2	1.89	0.53
1:A:1080:ILE:HG13	1:A:1082:MET:HE2	1.90	0.53
1:A:81:THR:HG21	1:A:91:MET:HE1	1.91	0.53
1:B:734:ARG:NH1	1:B:736:GLN:OE1	2.40	0.52
1:A:112:ARG:HH21	1:A:119:LEU:HD11	1.73	0.52
1:C:321:ARG:HB3	1:C:379:LEU:HD22	1.91	0.52
1:C:1022:LYS:NZ	1:C:1024:THR:O	2.42	0.52
1:B:502:LYS:HG2	1:B:503:PRO:HD2	1.92	0.52
1:C:697:PRO:HG2	1:C:811:GLY:HA2	1.92	0.52
1:B:695:VAL:HG11	1:B:751:VAL:HG21	1.92	0.52
1:C:1004:GLN:HG2	1:C:1017:PHE:CE2	2.44	0.52
1:A:1076:ILE:HA	1:A:1082:MET:HE3	1.92	0.51
1:B:18:ALA:HB2	1:B:186:TYR:CZ	2.45	0.51
1:C:935:ILE:HD13	1:C:947:LEU:HD23	1.93	0.51
1:B:879:ALA:HB3	1:C:75:ALA:HB3	1.92	0.51
1:A:479:ASP:N	1:A:479:ASP:OD1	2.42	0.51
1:C:599:PHE:O	1:C:602:VAL:HG22	2.11	0.51
1:C:1060:ALA:HB1	1:C:1067:SER:HB3	1.93	0.51
1:B:556:ASN:OD1	1:B:557:VAL:N	2.43	0.51
1:C:746:GLY:HA2	1:C:761:MET:HE3	1.93	0.51
1:B:1004:GLN:HG2	1:B:1017:PHE:CE2	2.46	0.50
1:C:321:ARG:HG2	1:C:354:LEU:HB3	1.92	0.50
1:A:793:VAL:HG21	1:A:1050:HIS:HB3	1.94	0.50
1:B:212:HIS:NE2	1:B:214:ARG:NH1	2.55	0.50
1:C:967:ASP:HB3	1:C:994:ASP:HA	1.93	0.50
1:A:482:ASP:OD1	1:A:502:LYS:HE2	2.11	0.50
1:A:576:ILE:HD13	1:A:606:LEU:HD11	1.94	0.50
1:B:140:SER:HB2	1:B:168:PHE:CZ	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1113:ASN:ND2	1:A:1115:PHE:H	2.10	0.49
1:B:1031:LEU:HD23	1:C:1035:SER:HB2	1.94	0.49
1:C:464:HIS:HB3	1:C:478:ILE:HG13	1.94	0.49
1:A:838:SER:HA	1:A:841:TRP:CE2	2.47	0.49
1:B:112:ARG:HA	1:B:123:GLY:HA2	1.93	0.49
1:B:545:ILE:HG23	1:B:604:ARG:HD2	1.94	0.49
1:A:802:LEU:HD13	1:A:859:PRO:HD3	1.94	0.49
1:C:81:THR:HG21	1:C:91:MET:HE1	1.94	0.48
1:C:1079:GLY:HA3	1:C:1134:ILE:HB	1.95	0.48
1:B:18:ALA:HB2	1:B:186:TYR:CE1	2.48	0.48
1:C:1039:VAL:HG22	1:C:1066:PRO:HG2	1.95	0.48
1:B:900:SER:OG	1:B:934:GLU:OE2	2.18	0.48
1:A:887:LEU:HD13	1:A:952:GLN:HB2	1.94	0.48
1:C:574:GLU:HB3	1:C:578:TYR:CE2	2.49	0.48
1:A:112:ARG:NH2	1:A:119:LEU:HD11	2.28	0.48
1:B:693:SER:HB2	1:B:703:PRO:HD3	1.96	0.48
1:A:146:GLU:OE1	1:A:301:ARG:NH2	2.47	0.47
1:B:112:ARG:NH2	1:B:119:LEU:HD11	2.29	0.47
1:B:334:LEU:HD21	1:C:345:VAL:HB	1.96	0.47
1:C:551:LEU:O	1:C:554:ARG:HG2	2.13	0.47
1:B:1000:ASN:OD1	5:B:1206:COA:H21	2.14	0.47
1:A:583:ILE:HG22	1:A:595:LEU:HD22	1.96	0.47
1:A:85:SER:HB2	1:A:112:ARG:HB3	1.97	0.47
1:A:141:SER:HB2	1:A:169:PHE:HB3	1.96	0.47
1:A:1004:GLN:HG2	1:A:1017:PHE:CE2	2.50	0.47
1:B:527:LYS:HD2	1:B:618:TRP:CE2	2.49	0.47
1:A:570:ILE:HG13	1:A:575:ALA:HB2	1.97	0.47
1:B:838:SER:HA	1:B:841:TRP:CE2	2.50	0.47
1:C:545:ILE:O	1:C:549:ILE:HG13	2.15	0.47
1:B:802:LEU:HD13	1:B:859:PRO:HD3	1.96	0.46
1:C:1072:TYR:HB2	1:C:1098:TRP:CE2	2.50	0.46
1:C:671:LYS:NZ	1:C:741:ASP:OD2	2.33	0.46
1:B:27:PRO:HB3	1:B:1017:PHE:HE2	1.80	0.46
1:B:321:ARG:HB3	1:B:379:LEU:HD22	1.97	0.46
1:C:554:ARG:HD2	5:C:1206:COA:C4A	2.46	0.46
1:C:678:ILE:HD11	1:C:767:VAL:HG23	1.96	0.46
5:C:1206:COA:H8A	5:C:1206:COA:H52A	1.97	0.46
1:A:189:MET:O	1:A:193:VAL:HG23	2.16	0.46
1:A:453:ASP:OD1	1:A:454:SER:N	2.48	0.46
1:B:416:ARG:HG2	1:B:466:ARG:HG2	1.98	0.46
1:B:641:ARG:HB2	1:B:642:PRO:HD3	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:556:ASN:OD1	1:C:557:VAL:N	2.48	0.46
1:A:263:GLY:HA3	1:A:296:GLY:HA2	1.98	0.46
1:B:279:GLU:OE1	1:B:473:GLN:HG2	2.16	0.46
1:B:453:ASP:OD1	1:B:454:SER:N	2.48	0.46
1:C:506:ILE:HG21	1:C:566:ILE:HG21	1.96	0.46
1:B:373:LYS:HE2	1:B:405:GLU:OE2	2.16	0.46
1:B:903:PHE:HB2	1:B:934:GLU:OE2	2.15	0.46
1:B:220:PRO:HD3	1:C:122:PHE:CE2	2.52	0.45
1:C:554:ARG:HD2	5:C:1206:COA:C5A	2.46	0.45
1:A:594:ILE:O	1:A:598:ASN:ND2	2.45	0.45
3:B:1204:TPP:H2	6:B:1308:HOH:O	2.15	0.45
1:A:424:SER:N	5:A:1206:COA:O4A	2.50	0.45
1:C:584:VAL:HA	1:C:595:LEU:HD11	1.98	0.45
1:B:206:LEU:HD23	1:B:212:HIS:CE1	2.52	0.45
1:A:1002:GLY:HA3	1:A:1016:ARG:NH1	2.32	0.45
1:B:501:ILE:HD13	1:B:535:LEU:HD13	1.98	0.45
1:B:506:ILE:HG21	1:B:566:ILE:HD12	1.97	0.45
1:B:435:ILE:HG23	1:B:446:ALA:HB1	1.96	0.45
1:C:484:ILE:O	1:C:507:PHE:HA	2.17	0.45
1:C:838:SER:HA	1:C:841:TRP:CE2	2.52	0.45
1:C:1127:ARG:O	1:C:1131:MET:HG2	2.17	0.45
1:B:75:ALA:HB3	1:C:879:ALA:HB3	1.99	0.45
1:B:836:GLY:HA2	3:B:1204:TPP:S1	2.57	0.45
1:A:422:LEU:N	1:A:425:ASP:OD2	2.49	0.45
1:B:514:SER:H	1:B:517:GLU:HG2	1.82	0.45
1:A:681:TRP:CD1	1:A:735:ILE:HB	2.52	0.44
1:B:91:MET:O	1:B:95:MET:HG3	2.17	0.44
1:B:834:ALA:O	1:B:839:SER:HB3	2.17	0.44
1:A:545:ILE:HB	1:A:558:ILE:HD13	1.98	0.44
1:B:718:PHE:HE1	1:B:778:ALA:HB2	1.82	0.44
1:C:113:ALA:HB2	1:C:124:ASP:OD2	2.17	0.44
1:A:519:ASP:OD1	1:A:527:LYS:NZ	2.50	0.44
1:A:18:ALA:HB2	1:A:186:TYR:CE1	2.53	0.44
1:A:419:PHE:HB2	1:A:463:SER:HB2	1.99	0.44
1:B:132:ARG:HH11	1:C:132:ARG:HH11	1.66	0.44
1:B:257:HIS:O	1:B:301:ARG:HG3	2.17	0.44
1:B:564:PHE:CD2	1:B:579:ILE:HD11	2.53	0.44
1:C:698:HIS:CE1	1:C:743:THR:HG21	2.52	0.44
1:C:834:ALA:O	1:C:839:SER:HB3	2.17	0.44
1:A:85:SER:HA	1:A:127:ASP:HB3	2.00	0.44
1:A:556:ASN:OD1	1:A:557:VAL:N	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:116:THR:OG1	1:C:117:HIS:N	2.51	0.44
1:A:128:VAL:HG21	1:A:168:PHE:CD2	2.52	0.44
1:A:659:ASP:OD1	1:A:659:ASP:N	2.51	0.44
1:C:466:ARG:HH11	1:C:478:ILE:HA	1.83	0.44
1:B:1079:GLY:HA3	1:B:1134:ILE:HB	2.00	0.43
1:A:206:LEU:HD23	1:A:212:HIS:CE1	2.53	0.43
1:B:136:PHE:CE2	1:B:164:PRO:HB2	2.54	0.43
1:C:567:ALA:O	1:C:568:ASN:ND2	2.51	0.43
1:C:636:ILE:HA	1:C:640:LEU:HB3	2.00	0.43
1:A:556:ASN:ND2	1:A:587:TYR:OH	2.51	0.43
1:B:783:GLU:HB2	1:B:854:ARG:HD2	2.00	0.43
1:A:430:ALA:HB2	1:A:556:ASN:HB2	2.01	0.43
1:A:1139:LEU:HD21	1:A:1150:LEU:HD12	2.00	0.43
1:C:954:ASP:OD1	1:C:954:ASP:N	2.52	0.43
1:A:954:ASP:OD1	1:A:954:ASP:N	2.52	0.43
1:C:613:LYS:HA	1:C:613:LYS:HD3	1.76	0.43
1:C:1004:GLN:HG3	1:C:1016:ARG:HB2	2.00	0.43
1:C:1026:LYS:HZ3	1:C:1098:TRP:HZ3	1.66	0.43
1:A:32:SER:O	1:A:36:GLU:HG3	2.19	0.43
1:B:18:ALA:O	1:B:48:ASN:HB2	2.19	0.43
1:C:594:ILE:O	1:C:598:ASN:ND2	2.49	0.43
1:A:427:THR:O	1:A:431:ASN:ND2	2.52	0.43
1:A:136:PHE:CD2	1:A:166:VAL:HG23	2.54	0.43
1:B:122:PHE:CE2	1:C:220:PRO:HD3	2.53	0.43
1:C:371:MET:HB3	1:C:390:VAL:HG11	2.00	0.43
1:C:718:PHE:CZ	1:C:734:ARG:HD3	2.54	0.43
1:C:112:ARG:HA	1:C:123:GLY:HA2	2.00	0.43
1:A:326:ASP:CG	1:A:336:GLU:HB3	2.38	0.42
1:A:514:SER:O	1:A:518:MET:HG2	2.19	0.42
1:B:530:ILE:HA	1:B:535:LEU:HD12	2.01	0.42
1:B:867:GLU:OE1	1:B:867:GLU:N	2.50	0.42
5:A:1206:COA:C8A	5:A:1206:COA:H51A	2.49	0.42
1:B:50:PHE:CZ	1:B:78:LEU:HD12	2.54	0.42
1:B:489:PRO:HG3	1:B:510:ASN:O	2.20	0.42
1:B:523:PRO:O	1:B:527:LYS:HG3	2.19	0.42
1:B:687:ILE:HG12	2:B:1201:SF4:S3	2.59	0.42
1:C:422:LEU:HG	1:C:423:GLY:N	2.34	0.42
1:C:817:TYR:CZ	1:C:1071:ALA:HB1	2.54	0.42
1:A:998:TYR:CE1	1:A:1006:SER:HB2	2.54	0.42
1:A:781:LEU:O	1:A:854:ARG:NH2	2.52	0.42
1:C:693:SER:HB2	1:C:703:PRO:HD3	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:464:HIS:CE1	1:A:477:LEU:HD22	2.55	0.42
1:C:887:LEU:HD13	1:C:952:GLN:HB2	2.00	0.42
1:A:694:LEU:HD22	1:A:793:VAL:HG13	2.01	0.42
1:A:1004:GLN:HG3	1:A:1016:ARG:HB2	2.01	0.42
1:A:1119:TYR:HE2	1:A:1122:PRO:HA	1.85	0.42
1:C:789:ASN:OD1	1:C:791:ALA:HB3	2.19	0.42
1:C:1162:LEU:HG	1:C:1166:LYS:HE3	2.01	0.42
1:B:1031:LEU:HD12	1:B:1034:MET:HE3	2.01	0.42
1:A:113:ALA:HB2	1:A:124:ASP:OD2	2.20	0.42
1:B:124:ASP:HA	1:B:327:ARG:HD3	2.01	0.42
1:B:178:VAL:O	1:B:447:GLN:HA	2.20	0.42
1:C:544:LYS:O	1:C:548:GLU:HG2	2.19	0.42
1:A:678:ILE:HD11	1:A:767:VAL:HG23	2.03	0.41
1:A:704:TYR:CE1	1:A:736:GLN:HB3	2.55	0.41
1:C:428:VAL:HG11	1:C:452:TYR:CE1	2.52	0.41
1:A:416:ARG:HG2	1:A:466:ARG:HG2	2.02	0.41
1:B:752:CYS:HA	2:B:1201:SF4:S1	2.61	0.41
1:B:1025:LYS:NZ	1:C:1036:TYR:O	2.44	0.41
1:B:935:ILE:HG12	1:B:946:LEU:HB3	2.01	0.41
1:C:136:PHE:CE2	1:C:164:PRO:HB2	2.55	0.41
1:C:283:GLU:OE2	1:C:476:TYR:OH	2.33	0.41
1:A:136:PHE:CE2	1:A:164:PRO:HB2	2.55	0.41
1:C:371:MET:HB3	1:C:390:VAL:CG1	2.50	0.41
1:C:1010:GLN:HG3	1:C:1097:TYR:CZ	2.55	0.41
1:A:1079:GLY:O	1:A:1134:ILE:HG13	2.20	0.41
1:C:583:ILE:HD13	1:C:598:ASN:HB3	2.02	0.41
1:A:416:ARG:HB3	1:A:478:ILE:HD12	2.01	0.41
1:A:480:GLN:HA	1:A:500:GLY:O	2.21	0.41
1:B:1004:GLN:HG3	1:B:1016:ARG:HB2	2.01	0.41
1:B:1057:LEU:HD23	1:B:1069:ILE:HD13	2.03	0.41
1:A:803:LEU:HD12	1:A:849:PRO:HB2	2.02	0.41
1:B:695:VAL:HG21	1:B:751:VAL:HG21	2.03	0.41
1:C:258:LEU:HD12	1:C:310:HIS:CG	2.56	0.41
1:A:422:LEU:HG	1:A:423:GLY:N	2.36	0.41
1:C:27:PRO:HB3	1:C:1017:PHE:HE2	1.84	0.41
1:B:416:ARG:HB3	1:B:478:ILE:HD13	2.03	0.41
1:B:429:GLY:N	5:B:1206:COA:O1A	2.46	0.41
1:B:434:SER:O	1:B:438:ILE:HG13	2.21	0.41
1:B:548:GLU:OE1	1:B:604:ARG:NH1	2.54	0.41
1:C:1072:TYR:HB2	1:C:1098:TRP:CD2	2.56	0.41
1:A:257:HIS:O	1:A:301:ARG:HG3	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:641:ARG:HB2	1:A:642:PRO:HD3	2.02	0.40
1:B:5:THR:HG22	1:B:180:LYS:HB2	2.02	0.40
1:B:1119:TYR:HE2	1:B:1122:PRO:HA	1.86	0.40
1:A:667:THR:HG22	1:A:847:ALA:HB1	2.03	0.40
1:B:861:TRP:HE3	1:C:213:GLN:HG3	1.86	0.40
1:C:524:ALA:HB1	1:C:622:VAL:HA	2.04	0.40
1:C:1010:GLN:HG3	1:C:1097:TYR:OH	2.20	0.40
1:A:790:PRO:HG3	1:A:799:ARG:NH2	2.37	0.40
1:A:903:PHE:HB2	1:A:934:GLU:OE2	2.21	0.40
1:B:786:VAL:HG13	1:B:788:PHE:H	1.85	0.40
1:B:954:ASP:OD1	1:B:954:ASP:N	2.49	0.40
1:A:112:ARG:HA	1:A:123:GLY:HA2	2.03	0.40
1:A:783:GLU:HB2	1:A:854:ARG:HD2	2.03	0.40
1:A:1080:ILE:HD13	1:A:1088:GLU:HG2	2.03	0.40
1:B:85:SER:HA	1:B:127:ASP:HB3	2.04	0.40
1:B:803:LEU:HD12	1:B:849:PRO:HB2	2.03	0.40
1:C:367:PHE:HA	1:C:371:MET:SD	2.61	0.40
1:C:424:SER:N	5:C:1206:COA:O5A	2.50	0.40
1:B:136:PHE:CD2	1:B:166:VAL:HG23	2.56	0.40
1:C:833:ASN:HD22	1:C:834:ALA:N	2.20	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	1167/1171 (100%)	1143 (98%)	24 (2%)	0	100	100
1	B	1162/1171 (99%)	1135 (98%)	27 (2%)	0	100	100
1	C	1157/1171 (99%)	1136 (98%)	21 (2%)	0	100	100
All	All	3486/3513 (99%)	3414 (98%)	72 (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	918/932 (98%)	913 (100%)	5 (0%)	88	93
1	B	911/932 (98%)	907 (100%)	4 (0%)	91	95
1	C	912/932 (98%)	909 (100%)	3 (0%)	92	96
All	All	2741/2796 (98%)	2729 (100%)	12 (0%)	91	95

All (12) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	224	PHE
1	A	452	TYR
1	A	467	PHE
1	A	833	ASN
1	A	1113	ASN
1	B	224	PHE
1	B	452	TYR
1	B	467	PHE
1	B	833	ASN
1	C	224	PHE
1	C	227	ARG
1	C	833	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (12) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	247	GLN
1	A	560	GLN
1	A	1113	ASN
1	A	1142	GLN
1	B	247	GLN
1	B	560	GLN

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Mol	Chain	Res	Type
1	B	833	ASN
1	C	247	GLN
1	C	480	GLN
1	C	560	GLN
1	C	568	ASN
1	C	833	ASN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no monosaccharides in this entry.

5.6 Ligand geometry

Of 18 ligands modelled in this entry, 3 are monoatomic - leaving 15 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
2	SF4	C	1203	1	0,12,12	-	-	-		
2	SF4	C	1202	1	0,12,12	-	-	-		
3	TPP	C	1204	4	22,27,27	2.13	6 (27%)	29,40,40	1.89	7 (24%)
2	SF4	A	1202	1	0,12,12	-	-	-		
2	SF4	A	1201	1	0,12,12	-	-	-		
3	TPP	A	1204	4	22,27,27	2.08	6 (27%)	29,40,40	1.89	7 (24%)
5	COA	C	1206	-	41,50,50	0.83	1 (2%)	52,75,75	1.19	3 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
2	SF4	B	1202	1	0,12,12	-	-	-		
2	SF4	A	1203	1	0,12,12	-	-	-		
2	SF4	C	1201	1	0,12,12	-	-	-		
3	TPP	B	1204	4	22,27,27	1.96	6 (27%)	29,40,40	1.62	7 (24%)
5	COA	A	1206	-	41,50,50	0.80	1 (2%)	52,75,75	1.31	5 (9%)
2	SF4	B	1203	1	0,12,12	-	-	-		
5	COA	B	1206	-	41,50,50	0.83	1 (2%)	52,75,75	1.25	6 (11%)
2	SF4	B	1201	1	0,12,12	-	-	-		

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	SF4	C	1203	1	-	-	0/6/5/5
3	TPP	C	1204	4	-	2/16/17/17	0/2/2/2
2	SF4	C	1202	1	-	-	0/6/5/5
2	SF4	A	1202	1	-	-	0/6/5/5
2	SF4	A	1201	1	-	-	0/6/5/5
3	TPP	A	1204	4	-	2/16/17/17	0/2/2/2
5	COA	C	1206	-	-	11/44/64/64	0/3/3/3
2	SF4	A	1203	1	-	-	0/6/5/5
2	SF4	B	1202	1	-	-	0/6/5/5
2	SF4	C	1201	1	-	-	0/6/5/5
3	TPP	B	1204	4	-	1/16/17/17	0/2/2/2
5	COA	A	1206	-	-	10/44/64/64	0/3/3/3
2	SF4	B	1203	1	-	-	0/6/5/5
5	COA	B	1206	-	-	4/44/64/64	0/3/3/3
2	SF4	B	1201	1	-	-	0/6/5/5

All (21) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	C	1204	TPP	C4-N3	-5.12	1.35	1.39
3	A	1204	TPP	C4-N3	-4.78	1.35	1.39
3	B	1204	TPP	C4-N3	-4.02	1.36	1.39
3	A	1204	TPP	C6-C5	3.87	1.52	1.50
3	C	1204	TPP	C6-C5	3.86	1.52	1.50
3	C	1204	TPP	C4'-N4'	3.74	1.43	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	1204	TPP	C4'-N4'	3.73	1.43	1.34
3	B	1204	TPP	C4'-N4'	3.71	1.43	1.34
3	B	1204	TPP	C7'-N3	-3.34	1.42	1.48
3	B	1204	TPP	C6-C5	3.33	1.52	1.50
3	C	1204	TPP	C7'-N3	-3.28	1.42	1.48
3	A	1204	TPP	C7'-N3	-3.25	1.42	1.48
3	A	1204	TPP	C7'-C5'	3.19	1.57	1.51
3	B	1204	TPP	C7'-C5'	3.15	1.57	1.51
3	C	1204	TPP	C7'-C5'	3.08	1.57	1.51
5	A	1206	COA	P2A-O6A	2.73	1.70	1.59
5	B	1206	COA	P2A-O6A	2.62	1.69	1.59
5	C	1206	COA	P2A-O6A	2.54	1.69	1.59
3	C	1204	TPP	C6'-C5'	2.26	1.42	1.37
3	A	1204	TPP	C6'-C5'	2.20	1.42	1.37
3	B	1204	TPP	C6'-C5'	2.17	1.42	1.37

All (35) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	C	1204	TPP	C6-C5-C4	-5.94	122.66	127.43
3	A	1204	TPP	C6-C5-C4	-5.77	122.80	127.43
5	C	1206	COA	N3A-C2A-N1A	-4.60	121.49	128.68
5	A	1206	COA	N3A-C2A-N1A	-4.52	121.61	128.68
5	B	1206	COA	N3A-C2A-N1A	-4.38	121.84	128.68
3	B	1204	TPP	C6-C5-C4	-3.59	124.55	127.43
3	C	1204	TPP	N4'-C4'-N3'	3.30	121.69	117.03
5	B	1206	COA	C3P-N4P-C5P	3.20	128.78	122.84
3	B	1204	TPP	C6'-N1'-C2'	3.16	121.34	115.96
5	A	1206	COA	C7P-N8P-C9P	3.14	128.20	122.59
3	C	1204	TPP	C6'-N1'-C2'	3.06	121.16	115.96
3	A	1204	TPP	C6'-N1'-C2'	3.03	121.12	115.96
3	A	1204	TPP	N4'-C4'-N3'	3.01	121.29	117.03
3	B	1204	TPP	C5'-C6'-N1'	-2.81	119.14	123.82
3	A	1204	TPP	C5'-C6'-N1'	-2.77	119.21	123.82
5	A	1206	COA	O4B-C1B-C2B	-2.74	102.92	106.93
3	C	1204	TPP	C5'-C6'-N1'	-2.73	119.27	123.82
3	B	1204	TPP	PA-O3A-PB	-2.71	123.53	132.83
3	C	1204	TPP	PA-O3A-PB	-2.63	123.81	132.83
3	B	1204	TPP	CM4-C4-N3	2.59	125.84	122.53
3	A	1204	TPP	PA-O3A-PB	-2.54	124.10	132.83
5	A	1206	COA	C3P-N4P-C5P	2.52	127.52	122.84
5	A	1206	COA	C3B-C2B-C1B	2.50	105.43	99.89

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	B	1206	COA	C7P-N8P-C9P	2.30	126.70	122.59
5	C	1206	COA	C3P-N4P-C5P	2.26	127.03	122.84
3	B	1204	TPP	N4'-C4'-N3'	2.22	120.17	117.03
3	C	1204	TPP	C5'-C4'-N4'	-2.21	119.05	122.19
5	B	1206	COA	O6A-CCP-CBP	-2.17	107.06	110.55
3	A	1204	TPP	CM4-C4-N3	2.15	125.27	122.53
5	B	1206	COA	CDP-CBP-CAP	2.12	112.50	108.82
5	C	1206	COA	CEP-CBP-CAP	2.07	112.41	108.82
3	B	1204	TPP	N1'-C2'-N3'	-2.06	122.00	125.54
3	C	1204	TPP	N1'-C2'-N3'	-2.04	122.03	125.54
5	B	1206	COA	CEP-CBP-CAP	2.03	112.34	108.82
3	A	1204	TPP	N1'-C2'-N3'	-2.02	122.06	125.54

There are no chirality outliers.

All (30) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	A	1206	COA	C3B-C4B-C5B-O5B
5	A	1206	COA	C5B-O5B-P1A-O3A
5	A	1206	COA	CCP-O6A-P2A-O4A
5	A	1206	COA	S1P-C2P-C3P-N4P
5	C	1206	COA	CCP-O6A-P2A-O4A
5	C	1206	COA	CCP-O6A-P2A-O5A
5	A	1206	COA	O4B-C4B-C5B-O5B
5	A	1206	COA	O5P-C5P-C6P-C7P
3	C	1204	TPP	PB-O3A-PA-O7
5	C	1206	COA	P2A-O3A-P1A-O5B
5	C	1206	COA	P1A-O3A-P2A-O6A
5	C	1206	COA	C3B-O3B-P3B-O8A
5	A	1206	COA	C5B-O5B-P1A-O1A
5	A	1206	COA	CCP-O6A-P2A-O5A
5	A	1206	COA	N4P-C5P-C6P-C7P
3	A	1204	TPP	PA-O3A-PB-O1B
5	C	1206	COA	P1A-O3A-P2A-O4A
5	C	1206	COA	C3B-O3B-P3B-O7A
5	B	1206	COA	C2P-C3P-N4P-C5P
5	A	1206	COA	CCP-O6A-P2A-O3A
5	B	1206	COA	C3B-O3B-P3B-O8A
5	B	1206	COA	C3B-O3B-P3B-O9A
5	C	1206	COA	C3B-O3B-P3B-O9A
5	C	1206	COA	CCP-O6A-P2A-O3A
5	B	1206	COA	P2A-O3A-P1A-O2A

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Mol	Chain	Res	Type	Atoms
5	C	1206	COA	C6P-C7P-N8P-C9P
5	C	1206	COA	O4B-C4B-C5B-O5B
3	A	1204	TPP	C4-C5-C6-C7
3	B	1204	TPP	C4-C5-C6-C7
3	C	1204	TPP	C4-C5-C6-C7

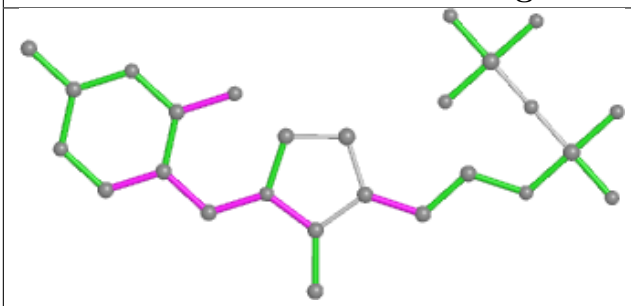
There are no ring outliers.

5 monomers are involved in 12 short contacts:

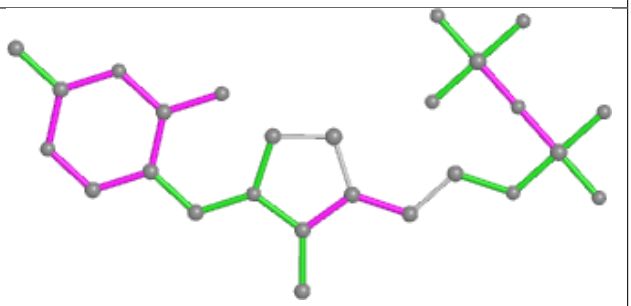
Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	C	1206	COA	4	0
3	B	1204	TPP	2	0
5	A	1206	COA	2	0
5	B	1206	COA	2	0
2	B	1201	SF4	2	0

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.

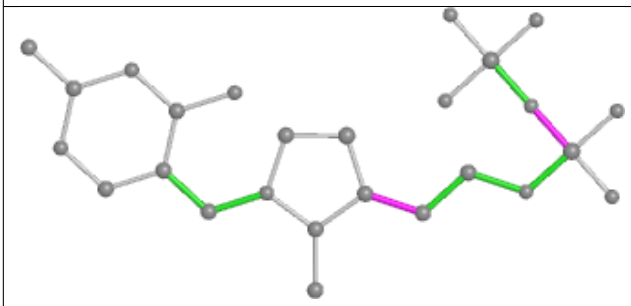
Ligand TPP C 1204



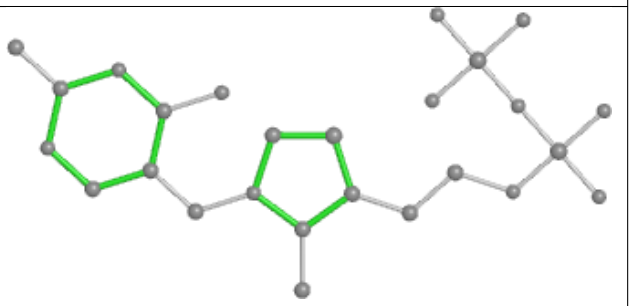
Bond lengths



Bond angles

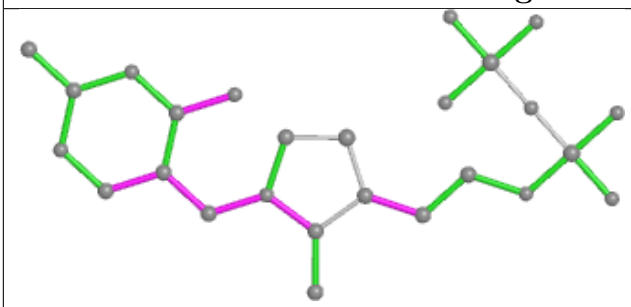


Torsions

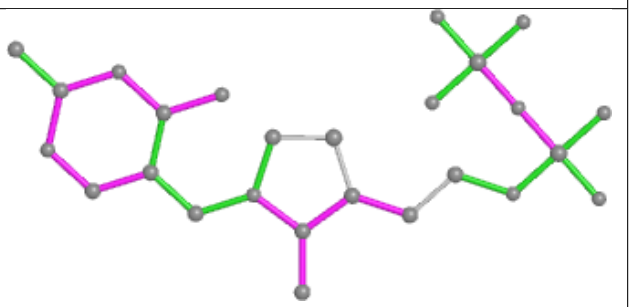


Rings

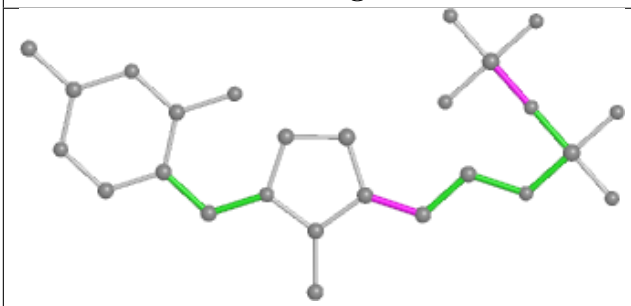
Ligand TPP A 1204



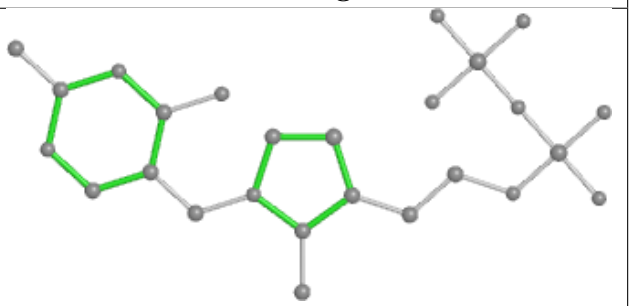
Bond lengths



Bond angles

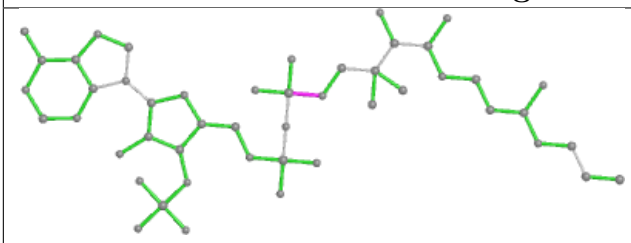


Torsions

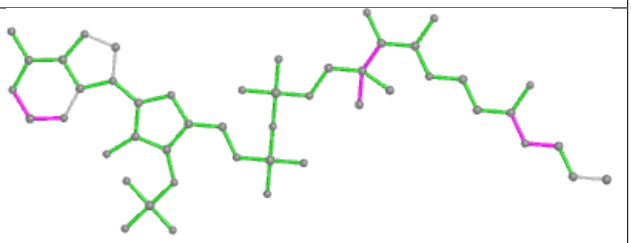


Rings

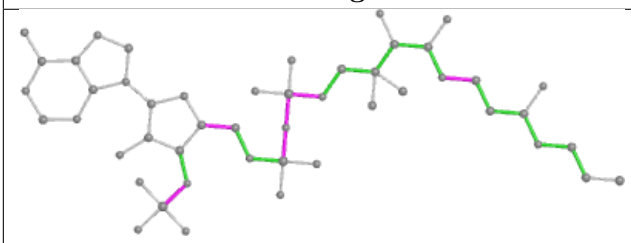
Ligand COA C 1206



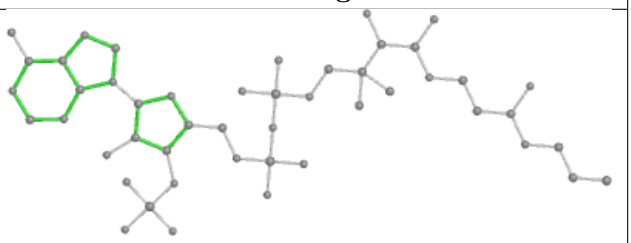
Bond lengths



Bond angles

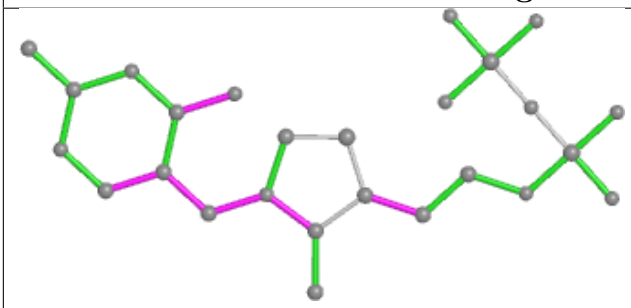


Torsions

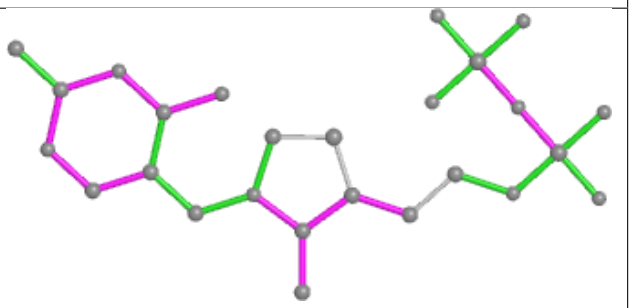


Rings

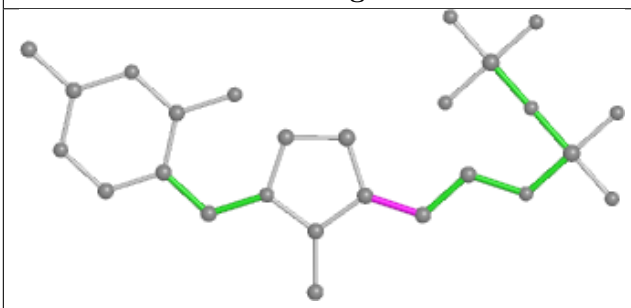
Ligand TPP B 1204



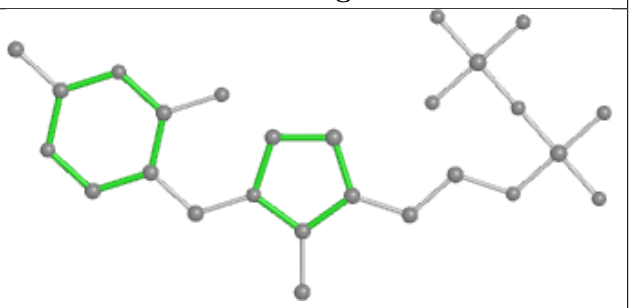
Bond lengths



Bond angles

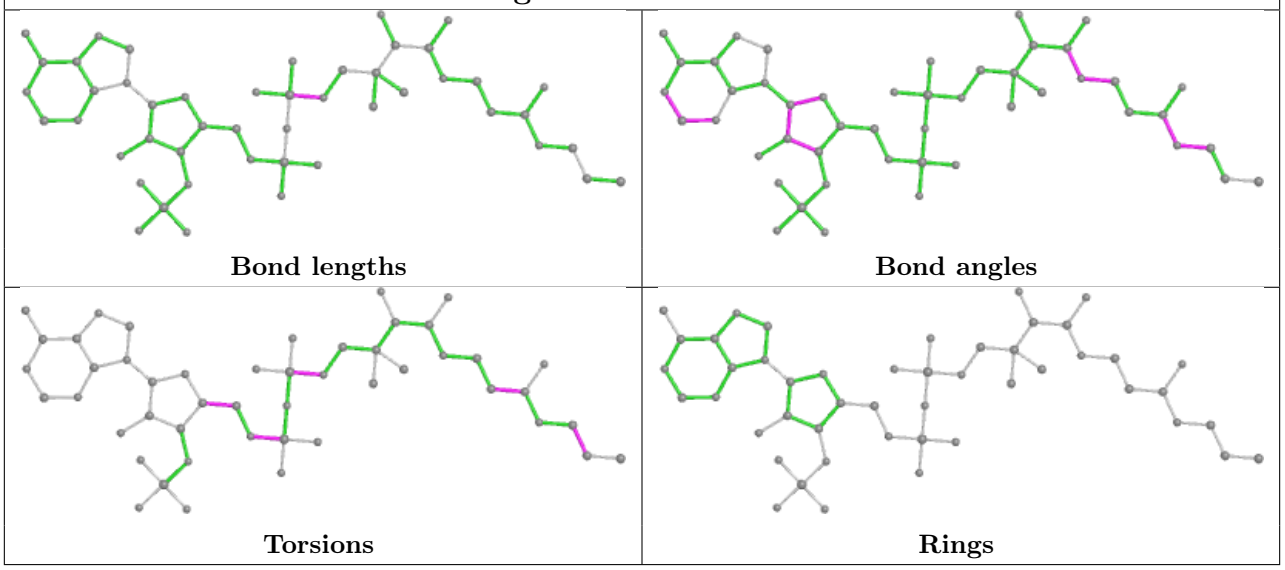


Torsions

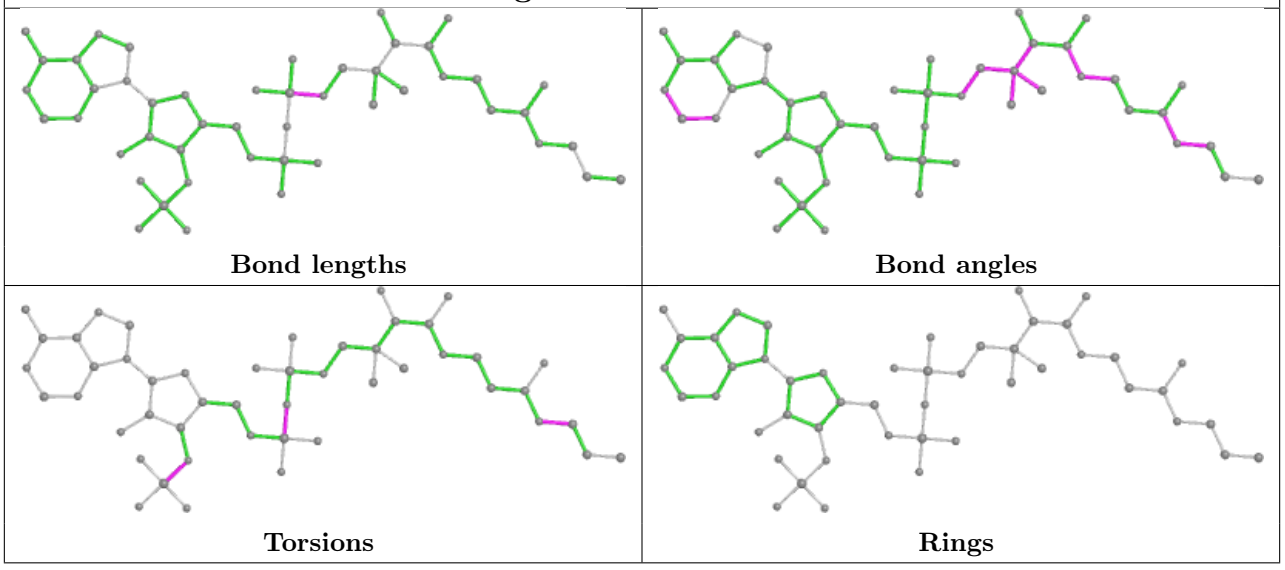


Rings

Ligand COA A 1206



Ligand COA B 1206



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	1169/1171 (99%)	-0.02	16 (1%)	75	75	40, 79, 150, 187	0
1	B	1166/1171 (99%)	0.21	52 (4%)	33	32	36, 90, 178, 253	0
1	C	1161/1171 (99%)	0.08	36 (3%)	49	48	48, 89, 172, 259	0
All	All	3496/3513 (99%)	0.09	104 (2%)	50	49	36, 86, 169, 259	0

All (104) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	537	PHE	6.2
1	C	612	ILE	5.4
1	C	507	PHE	4.9
1	C	535	LEU	4.3
1	C	508	LEU	4.1
1	B	705	LEU	4.1
1	C	513	TRP	4.0
1	B	683	PRO	3.9
1	B	708	PRO	3.9
1	A	811	GLY	3.8
1	C	420	PHE	3.8
1	C	614	TYR	3.8
1	C	522	LEU	3.7
1	C	514	SER	3.7
1	B	518	MET	3.6
1	B	733	PHE	3.6
1	B	788	PHE	3.5
1	B	707	LYS	3.5
1	B	706	ALA	3.5
1	C	563	PHE	3.4
1	B	587	TYR	3.4
1	B	784	VAL	3.4
1	C	613	LYS	3.4

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Mol	Chain	Res	Type	RSRZ
1	B	609	LEU	3.2
1	B	956	LEU	3.2
1	C	609	LEU	3.2
1	B	786	VAL	3.1
1	B	798	PHE	3.1
1	C	485	ALA	3.1
1	B	735	ILE	3.1
1	C	565	LYS	3.0
1	C	1142	GLN	3.0
1	C	543	VAL	2.9
1	C	608	ALA	2.9
1	C	538	TYR	2.9
1	C	541	ASP	2.9
1	C	530	ILE	2.8
1	A	1119	TYR	2.8
1	B	1018	ALA	2.8
1	A	906	ALA	2.8
1	B	553	SER	2.8
1	A	1011	THR	2.8
1	B	710	ASP	2.7
1	C	512	THR	2.7
1	B	703	PRO	2.7
1	B	513	TRP	2.7
1	A	1112	LYS	2.7
1	B	1074	PRO	2.7
1	B	619	ALA	2.7
1	C	484	ILE	2.7
1	B	551	LEU	2.6
1	A	1105	PRO	2.6
1	B	545	ILE	2.6
1	B	422	LEU	2.6
1	B	755	LYS	2.5
1	B	588	GLY	2.5
1	A	1072	TYR	2.4
1	A	1120	LYS	2.4
1	B	511	SER	2.4
1	C	542	ALA	2.4
1	B	1126	PHE	2.4
1	A	988	VAL	2.4
1	B	777	PHE	2.3
1	B	1150	LEU	2.3
1	B	1143	PHE	2.3

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Mol	Chain	Res	Type	RSRZ
1	A	1057	LEU	2.3
1	B	709	ALA	2.3
1	B	751	VAL	2.3
1	C	558	ILE	2.3
1	B	729	ALA	2.3
1	B	684	GLU	2.3
1	B	569	VAL	2.2
1	C	598	ASN	2.2
1	B	1086	GLN	2.2
1	C	607	GLU	2.2
1	C	620	ASP	2.2
1	B	484	ILE	2.2
1	B	687	ILE	2.2
1	C	419	PHE	2.2
1	C	486	CYS	2.2
1	B	824	LEU	2.2
1	B	754	ALA	2.1
1	C	506	ILE	2.1
1	C	551	LEU	2.1
1	A	1095	ALA	2.1
1	B	598	ASN	2.1
1	A	1126	PHE	2.1
1	A	1151	PHE	2.1
1	B	737	VAL	2.1
1	A	1012	GLY	2.1
1	C	611	GLU	2.1
1	B	563	PHE	2.1
1	B	1105	PRO	2.1
1	B	549	ILE	2.1
1	B	692	CYS	2.0
1	A	628	THR	2.0
1	B	512	THR	2.0
1	A	1155	GLU	2.0
1	C	454	SER	2.0
1	B	785	LYS	2.0
1	B	964	ILE	2.0
1	C	483	LEU	2.0
1	C	523	PRO	2.0
1	B	1110	GLU	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)

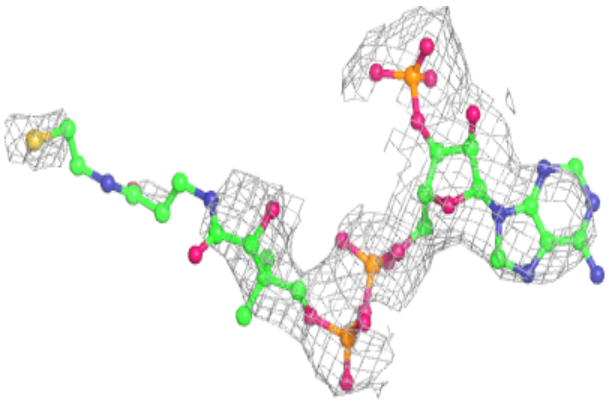
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

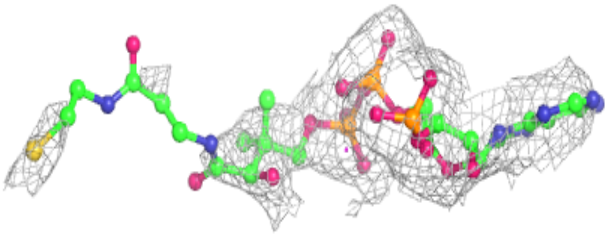
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
5	COA	A	1206	48/48	0.83	0.26	123,131,141,141	0
5	COA	B	1206	48/48	0.84	0.24	118,130,138,138	0
5	COA	C	1206	48/48	0.88	0.22	102,112,136,137	0
4	MG	A	1205	1/1	0.96	0.09	35,35,35,35	0
4	MG	B	1205	1/1	0.97	0.06	30,30,30,30	0
3	TPP	C	1204	26/26	0.97	0.17	54,63,67,71	0
3	TPP	B	1204	26/26	0.98	0.15	53,63,65,70	0
3	TPP	A	1204	26/26	0.98	0.19	68,74,79,82	0
4	MG	C	1205	1/1	0.98	0.06	19,19,19,19	0
2	SF4	C	1202	8/8	0.99	0.20	70,72,74,98	0
2	SF4	A	1201	8/8	0.99	0.13	91,110,112,126	0
2	SF4	B	1201	8/8	0.99	0.13	126,156,197,211	0
2	SF4	B	1202	8/8	0.99	0.15	97,107,117,169	0
2	SF4	C	1201	8/8	0.99	0.19	81,85,96,104	0
2	SF4	A	1202	8/8	1.00	0.18	74,81,107,115	0
2	SF4	A	1203	8/8	1.00	0.16	60,73,84,89	0
2	SF4	C	1203	8/8	1.00	0.17	61,63,65,65	0
2	SF4	B	1203	8/8	1.00	0.14	63,78,80,97	0

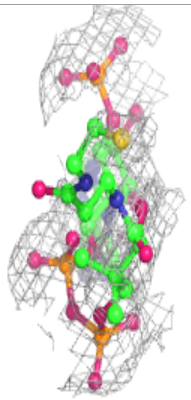
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around COA A 1206:

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

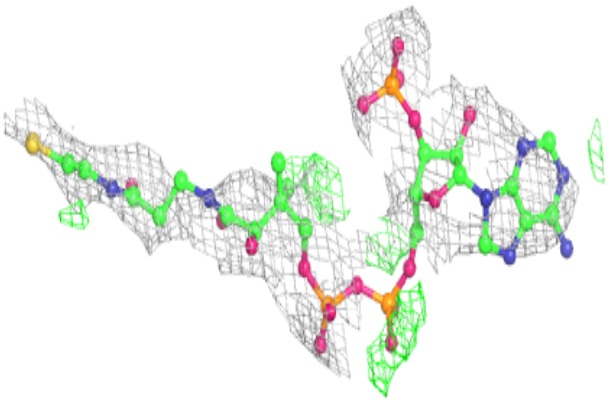


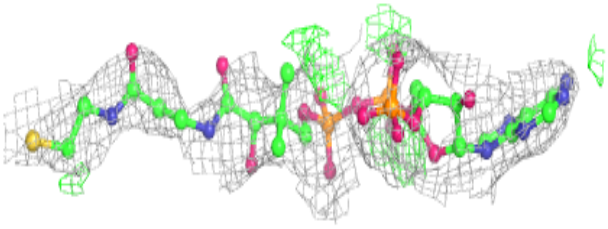


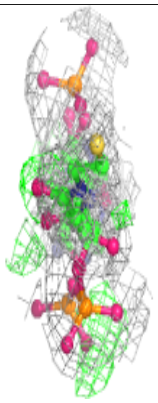


Electron density around COA B 1206:

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

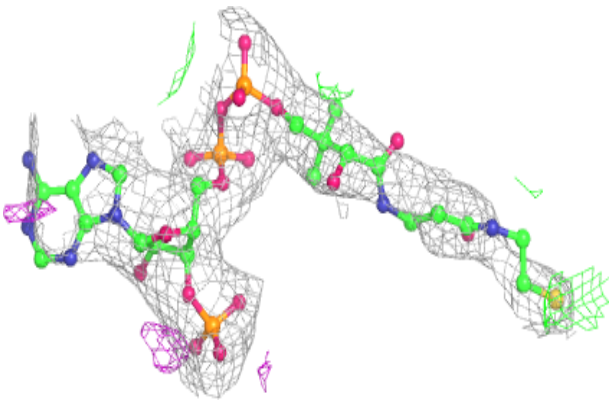


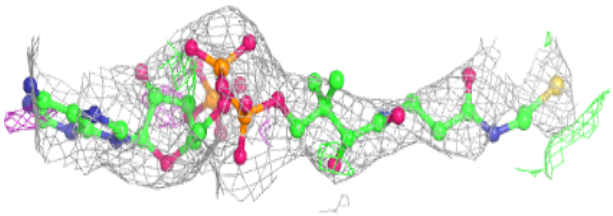


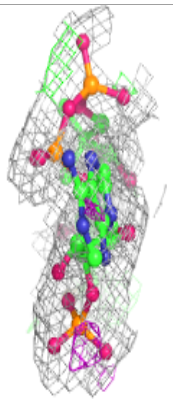


Electron density around COA C 1206:

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

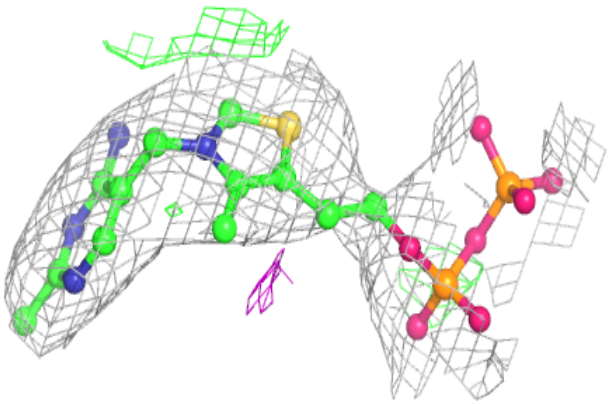


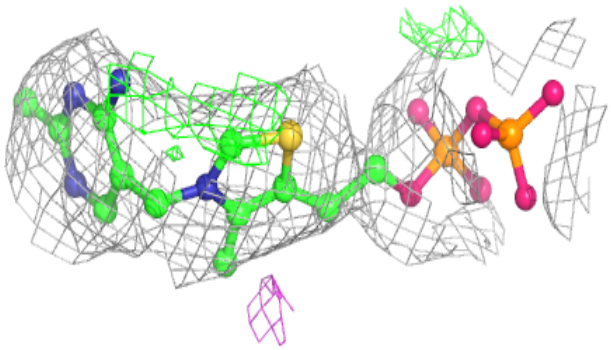


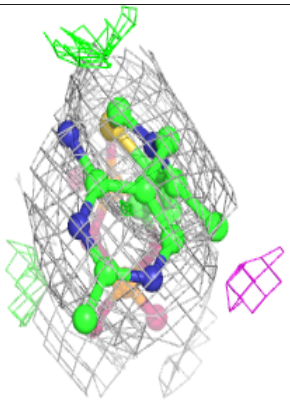


Electron density around TPP C 1204:

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

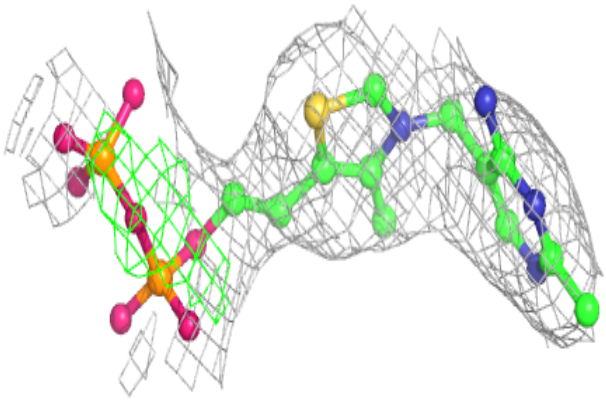


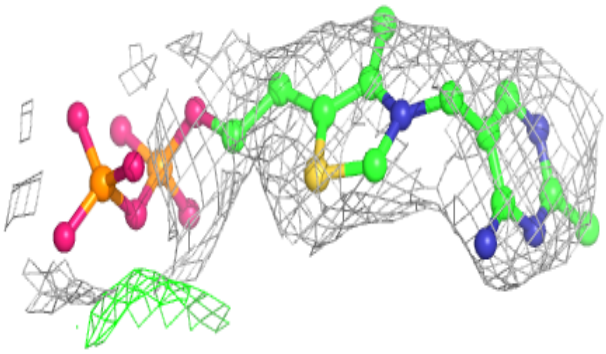


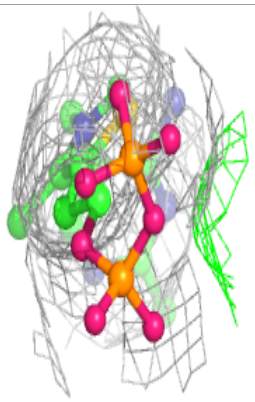


Electron density around TPP B 1204:

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

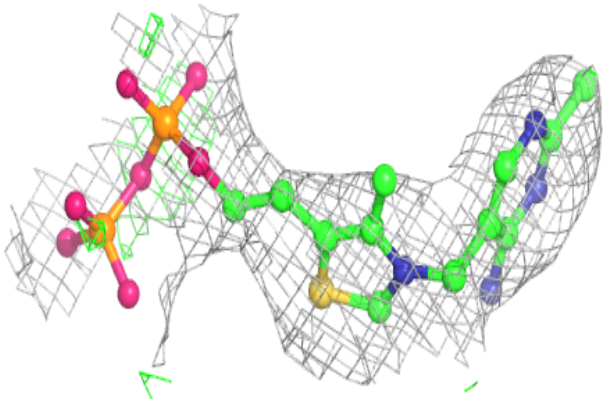


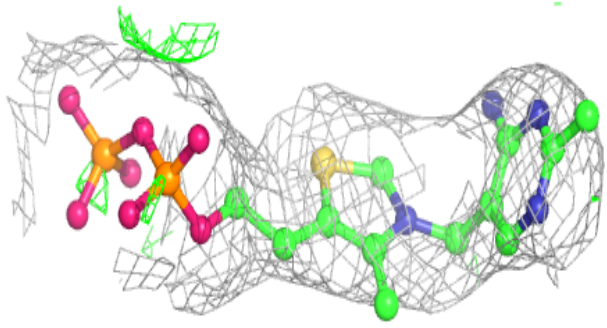


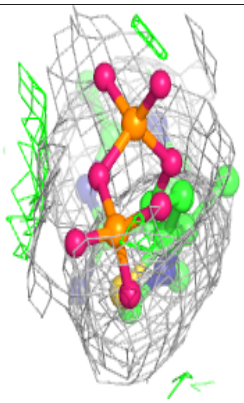


Electron density around TPP A 1204:

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







6.5 Other polymers (i)

There are no such residues in this entry.