



# Full wwPDB X-ray Structure Validation Report ⓘ

Jan 31, 2016 – 09:48 PM GMT

PDB ID : 1QR0  
Title : CRYSTAL STRUCTURE OF THE 4'-PHOSPHOPANTETHEINYL TRANSFERASE SFP-COENZYME A COMPLEX  
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Deposited on : 1999-06-17  
Resolution : 1.90 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.  
We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)  
A user guide is available at  
<http://wwpdb.org/validation/2016/XrayValidationReportHelp>  
with specific help available everywhere you see the ⓘ symbol.

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The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467  
Mogul : 1.7 (RC4), CSD as536be (2015)  
Xtriage (Phenix) : 1.9-1692  
EDS : rb-20026688  
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)  
Refmac : 5.8.0135  
CCP4 : 6.5.0  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : trunk26865

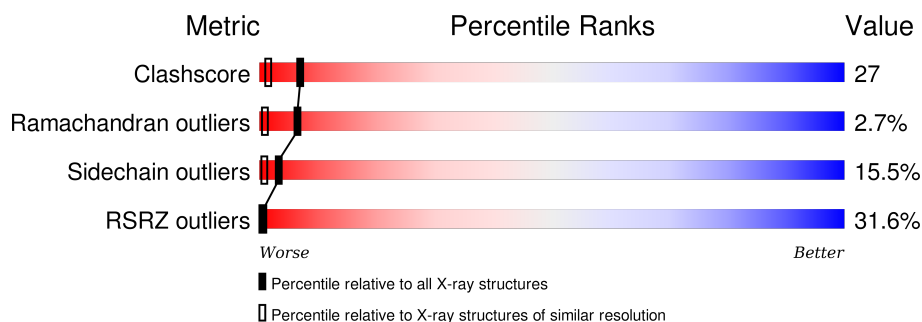
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 1.90 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
Clashscore	102246	5398 (1.90-1.90)
Ramachandran outliers	100387	5338 (1.90-1.90)
Sidechain outliers	100360	5339 (1.90-1.90)
RSRZ outliers	91569	4766 (1.90-1.90)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	228	

## 2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 2188 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 4'-PHOSPHOPANTETHEINYL TRANSFERASE SFP.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	228	Total	C	N	O	S	0	0	0
			1867	1189	313	355	10			

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	225	ARG	-	CONFLICT	UNP P39135
A	226	ALA	-	CONFLICT	UNP P39135
A	227	ALA	-	CONFLICT	UNP P39135
A	228	ALA	-	CONFLICT	UNP P39135

- Molecule 2 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	1	Total	Mg	0	0
			1	1		

- Molecule 3 is COENZYME A (three-letter code: COA) (formula: C<sub>21</sub>H<sub>36</sub>N<sub>7</sub>O<sub>16</sub>P<sub>3</sub>S).



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

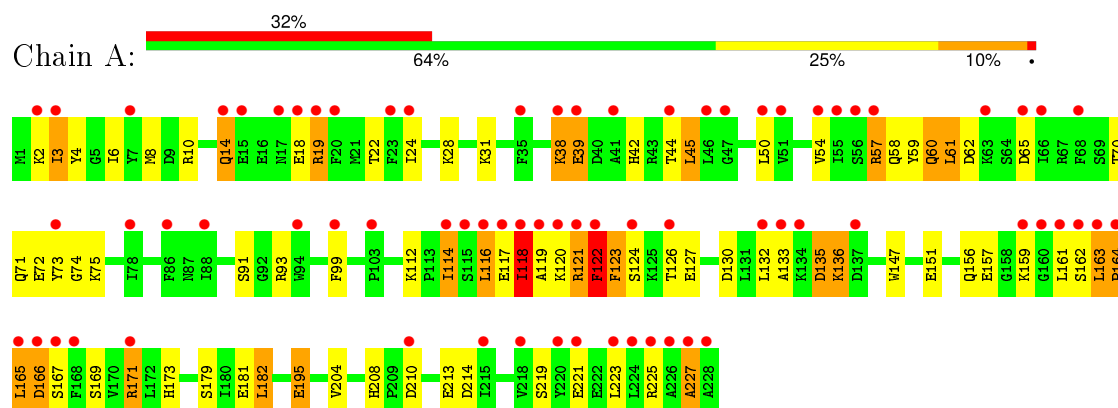
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	272	Total	O	0	0
			272	272		

### 3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors 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: 4'-PHOSPHOPANTETHEINYL TRANSFERASE SFP



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 43 21 2	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	65.30 Å 65.30 Å 150.30 Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	20.00 – 1.90 59.89 – 2.00	Depositor EDS
% Data completeness (in resolution range)	91.1 (20.00-1.90) 95.5 (59.89-2.00)	Depositor EDS
$R_{merge}$	0.07	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	3.92 (at 2.00 Å)	Xtriage
Refinement program	X-PLOR 3.851	Depositor
R, $R_{free}$	0.216 , 0.278 0.289 , (Not available)	Depositor DCC
$R_{free}$ test set	No test flags present.	DCC
Wilson B-factor (Å <sup>2</sup> )	29.2	Xtriage
Anisotropy	0.513	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.36 , 89.2	EDS
Estimated twinning fraction	No twinning to report.	Xtriage
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.48$ , $\langle L^2 \rangle = 0.32$	Xtriage
Outliers	0 of 21686 reflections	Xtriage
$F_o, F_c$ correlation	0.90	EDS
Total number of atoms	2188	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	29.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 6.11% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical values of  $\langle |L| \rangle$ ,  $\langle L^2 \rangle$  for acentric reflections are 0.5, 0.375 respectively for untwinned datasets, and 0.333, 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, 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	0.57	0/1915	0.73	0/2582

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	1867	0	1818	99	0
2	A	1	0	0	0	0
3	A	48	0	31	2	0
4	A	272	0	0	22	1
All	All	2188	0	1849	100	1

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 27.

All (100) 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:19:ARG:HG3	1:A:19:ARG:HH11	1.04	1.11
1:A:2:LYS:HG3	1:A:4:TYR:CE1	2.05	0.92
1:A:19:ARG:HG3	1:A:19:ARG:NH1	1.82	0.92
1:A:14:GLN:H	1:A:14:GLN:HE21	1.02	0.92
1:A:2:LYS:HG3	1:A:4:TYR:HE1	1.34	0.90
1:A:163:LEU:HD22	1:A:182:LEU:HD11	1.52	0.89
1:A:38:LYS:HZ3	1:A:39:GLU:H	1.22	0.86
1:A:219:SER:OG	1:A:221:GLU:HG2	1.77	0.85
1:A:124:SER:HB3	4:A:545:HOH:O	1.78	0.84
1:A:214:ASP:HB2	4:A:660:HOH:O	1.77	0.84
1:A:14:GLN:H	1:A:14:GLN:NE2	1.78	0.79
1:A:121:ARG:HB2	4:A:504:HOH:O	1.86	0.74
1:A:19:ARG:HH11	1:A:19:ARG:CG	1.92	0.73
1:A:59:TYR:O	1:A:61:LEU:HD13	1.90	0.72
1:A:122:PHE:HE2	1:A:161:LEU:HD21	1.55	0.71
1:A:38:LYS:HE2	1:A:39:GLU:HG2	1.72	0.71
1:A:171:ARG:HG3	1:A:171:ARG:HH11	1.55	0.71
1:A:126:THR:O	4:A:566:HOH:O	2.09	0.70
1:A:171:ARG:HG3	1:A:171:ARG:NH1	2.05	0.70
1:A:221:GLU:HB2	4:A:652:HOH:O	1.92	0.68
1:A:38:LYS:HD3	1:A:38:LYS:H	1.59	0.67
1:A:221:GLU:H	1:A:221:GLU:CD	1.97	0.67
1:A:122:PHE:CE2	1:A:161:LEU:HD21	2.30	0.67
1:A:130:ASP:O	1:A:133:ALA:HB3	1.96	0.66
1:A:167:SER:O	1:A:182:LEU:HD12	1.95	0.65
1:A:38:LYS:NZ	1:A:39:GLU:H	1.94	0.65
1:A:135:ASP:N	1:A:135:ASP:OD2	2.30	0.65
1:A:38:LYS:HD3	1:A:38:LYS:N	2.12	0.65
1:A:28:LYS:HD3	4:A:654:HOH:O	1.96	0.65
1:A:126:THR:HG23	4:A:520:HOH:O	1.97	0.63
1:A:2:LYS:HD2	4:A:483:HOH:O	1.98	0.63
1:A:59:TYR:O	1:A:60:GLN:HG2	1.99	0.63
1:A:70:THR:HG23	1:A:74:GLY:HA2	1.81	0.62
1:A:72:GLU:HG2	1:A:73:TYR:CD1	2.35	0.61
1:A:71:GLN:HG3	1:A:75:LYS:O	2.02	0.59
1:A:38:LYS:NZ	1:A:39:GLU:HB2	2.18	0.58
1:A:219:SER:HB2	1:A:221:GLU:OE1	2.03	0.58
1:A:136:LYS:NZ	4:A:647:HOH:O	2.37	0.58
1:A:116:LEU:HB3	1:A:120:LYS:HE3	1.86	0.57
1:A:166:ASP:OD1	1:A:166:ASP:N	2.23	0.57
1:A:163:LEU:CD2	1:A:182:LEU:HD11	2.31	0.56
1:A:8:MET:HE3	1:A:93:ARG:HA	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:117:GLU:HB2	4:A:525:HOH:O	2.06	0.56
1:A:123:PHE:HA	1:A:127:GLU:OE1	2.06	0.56
1:A:72:GLU:HG2	1:A:73:TYR:CE1	2.41	0.56
1:A:117:GLU:C	1:A:119:ALA:H	2.09	0.55
1:A:119:ALA:O	1:A:123:PHE:HB2	2.08	0.53
1:A:28:LYS:HE2	1:A:44:THR:CG2	2.39	0.52
1:A:70:THR:CG2	1:A:74:GLY:HA2	2.40	0.52
1:A:14:GLN:N	1:A:14:GLN:HE21	1.87	0.52
1:A:58:GLN:NE2	4:A:653:HOH:O	2.42	0.52
1:A:121:ARG:O	1:A:122:PHE:HB2	2.10	0.51
1:A:124:SER:OG	1:A:126:THR:HB	2.10	0.51
1:A:171:ARG:CG	1:A:171:ARG:HH11	2.17	0.51
1:A:118:ILE:N	4:A:667:HOH:O	2.32	0.51
1:A:59:TYR:C	1:A:60:GLN:HG2	2.32	0.50
1:A:219:SER:HG	1:A:221:GLU:HG2	1.74	0.50
1:A:173:HIS:HE1	1:A:179:SER:OG	1.94	0.50
1:A:91:SER:HA	4:A:602:HOH:O	2.11	0.49
1:A:227:ALA:HB2	4:A:625:HOH:O	2.13	0.49
1:A:57:ARG:HH21	1:A:58:GLN:HB2	1.78	0.49
1:A:39:GLU:OE1	1:A:42:HIS:HD2	1.96	0.49
1:A:3:ILE:HD12	1:A:204:VAL:HG21	1.96	0.48
1:A:39:GLU:HA	1:A:39:GLU:OE1	2.13	0.48
1:A:31:LYS:HE3	4:A:669:HOH:O	2.14	0.48
1:A:6:ILE:HD11	1:A:223:LEU:HD11	1.95	0.48
1:A:39:GLU:OE1	1:A:42:HIS:CD2	2.67	0.47
3:A:300:COA:HO1	3:A:300:COA:C8A	2.26	0.47
1:A:54:VAL:O	1:A:57:ARG:NH2	2.48	0.47
1:A:62:ASP:O	1:A:65:ASP:HB2	2.14	0.47
1:A:173:HIS:CE1	1:A:179:SER:OG	2.68	0.47
1:A:114:ILE:H	1:A:114:ILE:HG13	1.36	0.47
1:A:126:THR:HA	4:A:520:HOH:O	2.13	0.47
1:A:70:THR:HG22	1:A:71:GLN:O	2.15	0.47
1:A:219:SER:CB	1:A:221:GLU:HG2	2.45	0.47
1:A:2:LYS:HE2	1:A:99:PHE:HB2	1.96	0.46
1:A:195:GLU:HG3	4:A:514:HOH:O	2.16	0.46
1:A:38:LYS:HZ1	1:A:39:GLU:HB2	1.79	0.46
1:A:24:ILE:HD13	1:A:45:LEU:HD23	1.98	0.45
1:A:38:LYS:CE	1:A:39:GLU:H	2.29	0.45
1:A:93:ARG:NE	4:A:509:HOH:O	2.41	0.45
1:A:136:LYS:O	1:A:136:LYS:HD2	2.16	0.45
1:A:163:LEU:HD22	1:A:182:LEU:CD1	2.36	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:117:GLU:O	1:A:118:ILE:HB	2.17	0.44
1:A:162:SER:O	1:A:164:PRO:N	2.51	0.43
1:A:132:LEU:HD23	1:A:132:LEU:HA	1.86	0.43
1:A:122:PHE:CZ	1:A:161:LEU:HD11	2.54	0.42
1:A:147:TRP:CZ2	1:A:151:GLU:HG3	2.55	0.42
1:A:135:ASP:HB3	4:A:621:HOH:O	2.19	0.42
1:A:208:HIS:ND1	1:A:210:ASP:OD1	2.47	0.42
1:A:151:GLU:OE1	3:A:300:COA:H121	2.19	0.41
1:A:136:LYS:HD2	1:A:136:LYS:C	2.40	0.41
1:A:165:LEU:C	1:A:167:SER:H	2.24	0.41
1:A:164:PRO:CD	1:A:165:LEU:H	2.33	0.41
1:A:70:THR:HG23	1:A:74:GLY:CA	2.48	0.41
1:A:227:ALA:CB	4:A:625:HOH:O	2.69	0.41
1:A:157:GLU:HB2	4:A:561:HOH:O	2.19	0.41
1:A:210:ASP:HA	4:A:659:HOH:O	2.20	0.41
1:A:164:PRO:HD2	1:A:165:LEU:H	1.85	0.40
1:A:118:ILE:O	1:A:122:PHE:CB	2.69	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:461:HOH:O	4:A:569:HOH:O[4_555]	2.01	0.19

## 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	226/228 (99%)	209 (92%)	11 (5%)	6 (3%)	<b>6</b> <b>1</b>

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	122	PHE
1	A	159	LYS
1	A	227	ALA
1	A	164	PRO
1	A	118	ILE
1	A	163	LEU

### 5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	207/207 (100%)	175 (84%)	32 (16%)	<b>3</b> <b>1</b>

All (32) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	3	ILE
1	A	10	ARG
1	A	14	GLN
1	A	18	GLU
1	A	19	ARG
1	A	22	THR
1	A	38	LYS
1	A	39	GLU
1	A	45	LEU
1	A	50	LEU
1	A	57	ARG
1	A	60	GLN
1	A	61	LEU
1	A	112	LYS
1	A	114	ILE
1	A	116	LEU
1	A	118	ILE
1	A	121	ARG
1	A	122	PHE
1	A	123	PHE
1	A	135	ASP

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Mol	Chain	Res	Type
1	A	136	LYS
1	A	156	GLN
1	A	165	LEU
1	A	166	ASP
1	A	169	SER
1	A	171	ARG
1	A	181	GLU
1	A	182	LEU
1	A	195	GLU
1	A	213	GLU
1	A	225	ARG

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

Mol	Chain	Res	Type
1	A	14	GLN
1	A	42	HIS
1	A	156	GLN
1	A	173	HIS

### 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 carbohydrates in this entry.

### 5.6 Ligand geometry [i](#)

Of 2 ligands modelled in this entry, 1 is monoatomic - leaving 1 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	$\# Z  > 2$
3	COA	A	300	2	40,50,50	2.58	10 (25%)	50,75,75	2.95	18 (36%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the chemical component dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	COA	A	300	2	-	0/44/64/64	0/3/3/3

All (10) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	300	COA	C3B-C4B	-4.96	1.38	1.52
3	A	300	COA	C3P-N4P	-2.38	1.40	1.46
3	A	300	COA	C2P-S1P	-2.38	1.72	1.80
3	A	300	COA	OAP-CAP	-2.05	1.38	1.42
3	A	300	COA	C2A-N1A	2.77	1.39	1.33
3	A	300	COA	C2A-N3A	3.11	1.37	1.32
3	A	300	COA	C5P-N4P	3.87	1.42	1.33
3	A	300	COA	P3B-O3B	6.17	1.78	1.60
3	A	300	COA	C4A-N3A	6.85	1.45	1.35
3	A	300	COA	C9P-N8P	8.53	1.51	1.33

All (18) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	300	COA	C4B-O4B-C1B	-9.61	99.16	109.72
3	A	300	COA	P3B-O3B-C3B	-6.42	106.16	121.56
3	A	300	COA	C2B-C3B-C4B	-5.73	92.53	103.29
3	A	300	COA	N3A-C2A-N1A	-4.75	125.26	128.89
3	A	300	COA	C2P-C3P-N4P	-2.56	107.33	112.37
3	A	300	COA	O5P-C5P-N4P	-2.55	117.88	122.94
3	A	300	COA	C1B-N9A-C4A	-2.31	123.45	126.94
3	A	300	COA	OAP-CAP-C9P	-2.22	105.30	110.38
3	A	300	COA	CEP-CBP-CCP	-2.20	105.65	108.50
3	A	300	COA	O6A-P2A-O4A	-2.05	101.65	109.62

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	300	COA	O5B-C5B-C4B	2.01	116.54	109.12
3	A	300	COA	C4A-C5A-N7A	2.37	111.66	109.48
3	A	300	COA	O2A-P1A-O3A	2.88	118.17	105.09
3	A	300	COA	C7P-C6P-C5P	2.99	117.24	112.31
3	A	300	COA	C3B-C2B-C1B	3.07	107.34	99.98
3	A	300	COA	O3A-P2A-O6A	5.79	118.29	102.94
3	A	300	COA	O4B-C4B-C3B	6.26	119.30	104.86
3	A	300	COA	O6A-CCP-CBP	7.80	123.09	110.55

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	300	COA	2	0

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

## 6 Fit of model and data ⓘ

### 6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q< 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å <sup>2</sup> )	Q<0.9
1	A	228/228 (100%)	1.76	72 (31%) 1 0	12, 23, 62, 77	0

All (72) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	164	PRO	9.2
1	A	122	PHE	9.0
1	A	226	ALA	8.1
1	A	165	LEU	7.1
1	A	119	ALA	6.8
1	A	121	ARG	6.5
1	A	168	PHE	6.3
1	A	227	ALA	5.6
1	A	167	SER	5.2
1	A	116	LEU	4.9
1	A	228	ALA	4.1
1	A	223	LEU	4.1
1	A	163	LEU	4.0
1	A	160	GLY	3.9
1	A	57	ARG	3.7
1	A	115	SER	3.5
1	A	114	ILE	3.5
1	A	161	LEU	3.4
1	A	162	SER	3.4
1	A	73	TYR	3.3
1	A	117	GLU	3.2
1	A	56	SER	3.2
1	A	86	PHE	3.2
1	A	118	ILE	3.1
1	A	55	ILE	3.1
1	A	224	LEU	3.1
1	A	166	ASP	2.9

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Mol	Chain	Res	Type	RSRZ
1	A	66	ILE	2.9
1	A	51	VAL	2.9
1	A	35	PHE	2.9
1	A	20	PHE	2.9
1	A	124	SER	2.8
1	A	220	TYR	2.8
1	A	103	PRO	2.8
1	A	78	ILE	2.8
1	A	46	LEU	2.7
1	A	15	GLU	2.6
1	A	221	GLU	2.6
1	A	23	PHE	2.6
1	A	47	GLY	2.6
1	A	218	VAL	2.6
1	A	171	ARG	2.5
1	A	41	ALA	2.5
1	A	215	ILE	2.5
1	A	50	LEU	2.5
1	A	38	LYS	2.5
1	A	14	GLN	2.4
1	A	39	GLU	2.4
1	A	88	ILE	2.3
1	A	65	ASP	2.3
1	A	159	LYS	2.3
1	A	44	THR	2.3
1	A	2	LYS	2.3
1	A	132	LEU	2.3
1	A	54	VAL	2.3
1	A	126	THR	2.3
1	A	19	ARG	2.2
1	A	137	ASP	2.2
1	A	133	ALA	2.2
1	A	99	PHE	2.2
1	A	94	TRP	2.2
1	A	24	ILE	2.2
1	A	134	LYS	2.1
1	A	120	LYS	2.1
1	A	3	ILE	2.1
1	A	63	LYS	2.1
1	A	7	TYR	2.1
1	A	225	ARG	2.1
1	A	68	PHE	2.1

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Mol	Chain	Res	Type	RSRZ
1	A	17	ASN	2.0
1	A	210	ASP	2.0
1	A	18	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 carbohydrates 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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	LLDF	B-factors( $\text{\AA}^2$ )	Q<0.9
3	COA	A	300	48/48	0.91	0.20	0.19	16,23,77,88	0
2	MG	A	400	1/1	0.82	0.09	-3.87	25,25,25,25	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.