



# Full wwPDB X-ray Structure Validation Report ⓘ

Sep 17, 2017 – 01:19 AM EDT

PDB ID : 4PGH  
Title : Caffeic acid O-methyltransferase from Sorghum bicolor  
Authors : Green, A.R.; Lewis, K.M.; Kang, C.  
Deposited on : unknown  
Resolution : 2.80 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 : 1.7.2 (RC1), CSD as538be (2017)  
Xtriage (Phenix) : 1.9-1692  
EDS : rb-20029824  
Percentile statistics : 20161228.v01 (using entries in the PDB archive December 28th 2016)  
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) : rb-20029824

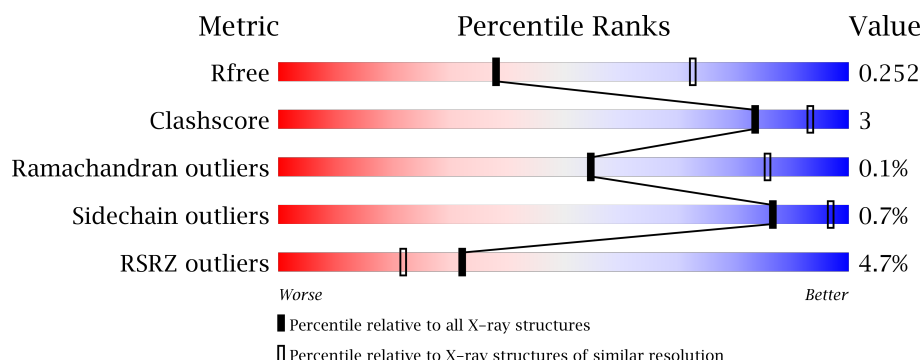
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

## *X-RAY DIFFRACTION*

The reported resolution of this entry is 2.80 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))
$R_{free}$	100719	2583 (2.80-2.80)
Clashscore	112137	3033 (2.80-2.80)
Ramachandran outliers	110173	2983 (2.80-2.80)
Sidechain outliers	110143	2985 (2.80-2.80)
RSRZ outliers	101464	2610 (2.80-2.80)

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	358	<div> <div>94%</div> <div>5%</div> </div>
1	B	358	<div> <div>93%</div> <div>6%</div> </div>
1	C	358	<div> <div>91%</div> <div>8%</div> </div>
1	D	358	<div> <div>17%</div> <div>88%</div> <div>12%</div> </div>

## 2 Entry composition [i](#)

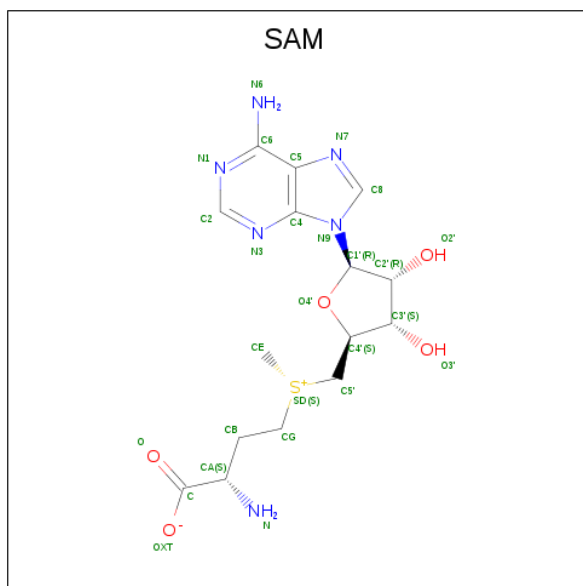
There are 3 unique types of molecules in this entry. The entry contains 10719 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Caffeic acid O-methyltransferase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	354	Total	C	N	O	S	0	0	0
			2616	1675	438	483	20			
1	B	357	Total	C	N	O	S	0	0	0
			2533	1608	436	469	20			
1	C	353	Total	C	N	O	S	0	0	0
			2612	1670	437	485	20			
1	D	358	Total	C	N	O	S	0	0	0
			2636	1688	443	485	20			

- Molecule 2 is S-ADENOSYLMETHIONINE (three-letter code: SAM) (formula:  $C_{15}H_{22}N_6O_5S$ ).



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

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	C	1	Total	C	N	O	S	0	0
			27	15	6	5	1		
2	D	1	Total	C	N	O	S	0	0
			27	15	6	5	1		

- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	62	Total	O	0	0
			62	62		
3	B	43	Total	O	0	0
			43	43		
3	C	78	Total	O	0	0
			78	78		
3	D	31	Total	O	0	0
			31	31		

### 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 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.

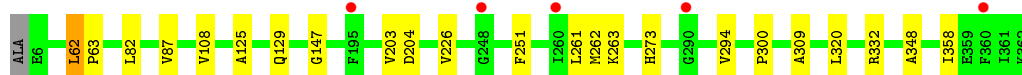
- Molecule 1: Caffeic acid O-methyltransferase

Chain A: 



- Molecule 1: Caffeic acid O-methyltransferase

Chain B: 




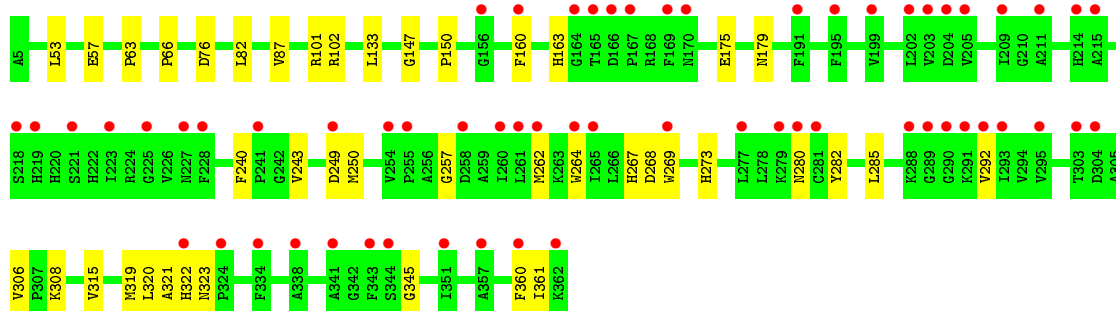
- Molecule 1: Caffeic acid O-methyltransferase

Chain C: 



- Molecule 1: Caffeic acid O-methyltransferase

Chain D: 



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	76.78Å 63.90Å 152.47Å 90.00° 93.02° 90.00°	Depositor
Resolution (Å)	48.94 – 2.80 49.09 – 2.80	Depositor EDS
% Data completeness (in resolution range)	99.5 (48.94-2.80) 97.3 (49.09-2.80)	Depositor EDS
$R_{merge}$	0.06	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	6.63 (at 2.81Å)	Xtriage
Refinement program	PHENIX (phenix.refine: 1.8.4_1496)	Depositor
R, $R_{free}$	0.204 , 0.252 0.202 , 0.252	Depositor DCC
$R_{free}$ test set	1949 reflections (5.45%)	DCC
Wilson B-factor (Å <sup>2</sup> )	59.3	Xtriage
Anisotropy	0.420	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.26 , 47.6	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.49$ , $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
$F_o, F_c$ correlation	0.94	EDS
Total number of atoms	10719	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	69.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 53.72 % of the origin peak, indicating pseudo translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo translational symmetry is equal to 4.0461e-05. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

<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, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: SAM

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	0.20	0/2680	0.35	0/3655
1	B	0.20	0/2595	0.34	0/3551
1	C	0.20	0/2676	0.35	0/3652
1	D	0.20	0/2700	0.35	0/3684
All	All	0.20	0/10651	0.35	0/14542

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 [i](#)

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	2616	0	2436	11	0
1	B	2533	0	2220	14	0
1	C	2612	0	2426	16	0
1	D	2636	0	2496	23	0
2	A	27	0	22	0	0
2	B	27	0	22	1	0
2	C	27	0	22	0	0
2	D	27	0	22	0	0
3	A	62	0	0	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	43	0	0	0	0
3	C	78	0	0	4	0
3	D	31	0	0	0	0
All	All	10719	0	9666	57	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 (57) 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:D:250:MET:O	1:D:280:ASN:ND2	2.23	0.71
1:C:229:ASP:O	3:C:553:HOH:O	2.11	0.69
1:C:248:GLY:N	3:C:553:HOH:O	2.24	0.67
1:D:306:VAL:HG22	1:D:308:LYS:H	1.63	0.64
1:D:76:ASP:OD2	1:D:101:ARG:NH2	2.30	0.61
1:B:263:LYS:NZ	2:B:401:SAM:OXT	2.34	0.60
1:C:345:GLY:HA3	1:C:361:ILE:HB	1.83	0.59
1:A:327:ARG:NH2	3:A:511:HOH:O	2.38	0.57
1:D:268:ASP:OD1	1:D:323:ASN:ND2	2.39	0.56
1:D:82:LEU:HB3	1:D:87:VAL:HB	1.89	0.55
1:A:262:MET:HG3	1:A:265:ILE:HB	1.89	0.54
1:B:203:VAL:HG22	1:B:226:VAL:HB	1.91	0.53
1:C:10:ALA:N	3:C:513:HOH:O	2.42	0.53
1:D:285:LEU:HD11	1:D:292:VAL:HG23	1.90	0.52
1:C:248:GLY:O	3:C:553:HOH:O	2.18	0.50
1:D:240:PHE:HB2	1:D:243:VAL:HB	1.93	0.50
1:D:150:PRO:HG2	1:D:321:ALA:HA	1.92	0.50
1:A:345:GLY:HA3	1:A:361:ILE:HB	1.94	0.50
1:D:249:ASP:N	1:D:249:ASP:OD1	2.44	0.50
1:B:82:LEU:HB3	1:B:87:VAL:HB	1.93	0.50
1:C:74:MET:HG2	1:D:320:LEU:HD11	1.93	0.50
1:B:251:PHE:HE1	1:B:273:HIS:HB3	1.76	0.49
1:D:269:TRP:HB3	1:D:273:HIS:HB2	1.94	0.48
1:C:145:LEU:HA	1:D:66:PRO:HB3	1.94	0.48
1:B:204:ASP:HA	1:B:261:LEU:HB3	1.93	0.48
1:A:82:LEU:HB3	1:A:87:VAL:HB	1.94	0.48
1:D:345:GLY:N	1:D:361:ILE:O	2.47	0.48
1:D:175:GLU:O	1:D:179:ASN:ND2	2.40	0.47
1:C:262:MET:HG3	1:C:265:ILE:HB	1.97	0.47
1:C:82:LEU:HB3	1:C:87:VAL:HB	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:150:PRO:HG2	1:C:321:ALA:HA	1.97	0.46
1:C:323:ASN:HA	1:C:324:PRO:HD3	1.81	0.46
1:A:16:ALA:HB1	1:B:108:VAL:HA	1.98	0.46
1:D:315:VAL:O	1:D:319:MET:HG2	2.16	0.45
1:C:189:LEU:HD21	1:C:216:ILE:HG12	1.97	0.45
1:A:170:ASN:O	1:A:174:ASN:ND2	2.29	0.45
1:B:125:ALA:O	1:B:129:GLN:NE2	2.49	0.45
1:A:200:SER:OG	1:A:258:ASP:OD1	2.33	0.45
1:D:264:TRP:HB3	1:D:267:HIS:HE1	1.82	0.45
1:B:348:ALA:HA	1:B:358:ILE:HA	1.98	0.45
1:A:68:ASN:ND2	1:B:147:GLY:HA2	2.32	0.44
1:D:57:GLU:OE2	1:D:102:ARG:NH2	2.50	0.44
1:B:62:LEU:HG	1:B:63:PRO:HD2	2.00	0.43
1:D:133:LEU:HD22	1:D:322:HIS:CD2	2.53	0.43
1:C:170:ASN:OD1	1:C:174:ASN:ND2	2.51	0.43
1:D:292:VAL:HB	1:D:360:PHE:HB2	2.01	0.42
1:A:27:SER:O	1:A:31:MET:HG2	2.19	0.42
1:A:74:MET:HG2	1:B:320:LEU:HD11	2.00	0.42
1:B:262:MET:HB2	1:B:294:VAL:HG22	2.00	0.42
1:D:262:MET:HB2	1:D:262:MET:HE3	1.85	0.42
1:B:300:PRO:HG2	1:B:309:ALA:HA	2.01	0.42
1:C:292:VAL:HB	1:C:360:PHE:HB2	2.02	0.41
1:D:257:GLY:O	1:D:285:LEU:HD23	2.21	0.41
1:D:160:PHE:HA	1:D:163:HIS:CE1	2.56	0.40
1:A:94:ASP:CG	1:B:332:ARG:HH22	2.25	0.40
1:C:299:LEU:HD23	1:C:312:VAL:HG12	2.03	0.40
1:C:68:ASN:ND2	1:D:147:GLY:HA2	2.35	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles ⓘ

### 5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	352/358 (98%)	343 (97%)	9 (3%)	0	100	100
1	B	355/358 (99%)	347 (98%)	8 (2%)	0	100	100
1	C	351/358 (98%)	338 (96%)	13 (4%)	0	100	100
1	D	356/358 (99%)	342 (96%)	13 (4%)	1 (0%)	44	77
All	All	1414/1432 (99%)	1370 (97%)	43 (3%)	1 (0%)	55	86

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	63	PRO

### 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	243/287 (85%)	243 (100%)	0	100	100
1	B	213/287 (74%)	212 (100%)	1 (0%)	91	97
1	C	244/287 (85%)	240 (98%)	4 (2%)	68	91
1	D	255/287 (89%)	253 (99%)	2 (1%)	85	96
All	All	955/1148 (83%)	948 (99%)	7 (1%)	87	97

All (7) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	62	LEU
1	C	81	LEU
1	C	119	VAL
1	C	267	HIS
1	C	303	THR
1	D	53	LEU
1	D	282	TYR

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
1	D	267	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](#)

4 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	SAM	A	401	-	21,29,29	1.73	3 (14%)	17,42,42	2.42	6 (35%)
2	SAM	B	401	-	21,29,29	1.85	3 (14%)	17,42,42	2.25	5 (29%)
2	SAM	C	401	-	21,29,29	1.73	3 (14%)	17,42,42	2.27	5 (29%)
2	SAM	D	401	-	21,29,29	1.73	3 (14%)	17,42,42	2.66	6 (35%)

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	SAM	A	401	-	-	0/8/33/33	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	SAM	B	401	-	-	0/8/33/33	0/3/3/3
2	SAM	C	401	-	-	0/8/33/33	0/3/3/3
2	SAM	D	401	-	-	0/8/33/33	0/3/3/3

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	401	SAM	C2'-C1'	-5.54	1.44	1.53
2	D	401	SAM	C2'-C1'	-5.42	1.45	1.53
2	C	401	SAM	C2'-C1'	-5.10	1.45	1.53
2	A	401	SAM	C2'-C1'	-5.02	1.45	1.53
2	C	401	SAM	C6-N6	2.31	1.43	1.34
2	B	401	SAM	C6-N6	2.31	1.43	1.34
2	A	401	SAM	C6-N6	2.38	1.43	1.34
2	D	401	SAM	C6-N6	2.38	1.43	1.34
2	D	401	SAM	O4'-C1'	3.64	1.46	1.41
2	C	401	SAM	O4'-C1'	4.03	1.46	1.41
2	A	401	SAM	O4'-C1'	4.09	1.46	1.41
2	B	401	SAM	O4'-C1'	4.27	1.47	1.41

All (22) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	401	SAM	N3-C2-N1	-7.91	121.97	128.86
2	C	401	SAM	N3-C2-N1	-7.46	122.36	128.86
2	A	401	SAM	N3-C2-N1	-7.44	122.38	128.86
2	B	401	SAM	N3-C2-N1	-7.13	122.65	128.86
2	D	401	SAM	C4'-O4'-C1'	-5.29	104.14	109.77
2	A	401	SAM	C4'-O4'-C1'	-4.25	105.25	109.77
2	D	401	SAM	C1'-N9-C4	-3.12	121.25	126.64
2	B	401	SAM	C1'-N9-C4	-2.97	121.50	126.64
2	C	401	SAM	C4'-O4'-C1'	-2.67	106.93	109.77
2	A	401	SAM	C4-C5-N7	-2.46	107.04	109.41
2	B	401	SAM	C4-C5-N7	-2.44	107.05	109.41
2	C	401	SAM	C4-C5-N7	-2.41	107.09	109.41
2	A	401	SAM	C1'-N9-C4	-2.27	122.72	126.64
2	D	401	SAM	C4-C5-N7	-2.16	107.33	109.41
2	B	401	SAM	CE-SD-C5'	2.09	119.01	99.84
2	C	401	SAM	CE-SD-CG	2.10	119.18	99.84
2	C	401	SAM	CE-SD-C5'	2.13	119.39	99.84
2	D	401	SAM	CE-SD-CG	2.13	119.45	99.84
2	A	401	SAM	CE-SD-CG	2.13	119.46	99.84

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	401	SAM	CE-SD-CG	2.14	119.55	99.84
2	A	401	SAM	CE-SD-C5'	2.14	119.55	99.84
2	D	401	SAM	CE-SD-C5'	2.20	120.09	99.84

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	401	SAM	1	0

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

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

There are no chain breaks in this entry.

## 6 Fit of model and data ⓘ

### 6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<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	354/358 (98%)	-0.37	0 100 100	32, 53, 90, 108	0
1	B	357/358 (99%)	-0.11	5 (1%) 75 69	29, 69, 103, 130	0
1	C	353/358 (98%)	-0.34	1 (0%) 93 92	37, 56, 93, 154	0
1	D	358/358 (100%)	0.69	61 (17%) 2 1	33, 95, 149, 166	0
All	All	1422/1432 (99%)	-0.03	67 (4%) 32 22	29, 63, 127, 166	0

All (67) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	290	GLY	10.7
1	D	164	GLY	6.6
1	D	204	ASP	6.6
1	D	281	CYS	5.4
1	D	205	VAL	5.1
1	D	249	ASP	5.0
1	D	160	PHE	4.9
1	D	338	ALA	4.8
1	D	360	PHE	4.8
1	D	277	LEU	4.7
1	D	293	ILE	4.7
1	D	304	ASP	4.6
1	D	221	SER	4.6
1	D	291	LYS	4.3
1	D	260	ILE	4.3
1	D	262	MET	4.1
1	D	202	LEU	4.0
1	D	211	ALA	3.9
1	B	195	PHE	3.9
1	D	288	LYS	3.9
1	D	280	ASN	3.9

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Mol	Chain	Res	Type	RSRZ
1	D	228	PHE	3.8
1	D	295	VAL	3.8
1	D	258	ASP	3.7
1	B	360	PHE	3.7
1	D	289	GLY	3.6
1	D	166	ASP	3.5
1	D	165	THR	3.5
1	D	241	PRO	3.4
1	D	265	ILE	3.4
1	D	199	VAL	3.4
1	D	227	ASN	3.2
1	D	203	VAL	3.2
1	D	215	ALA	3.2
1	D	170	ASN	3.2
1	D	169	PHE	3.2
1	D	292	VAL	3.2
1	D	209	ILE	3.1
1	D	303	THR	3.0
1	D	195	PHE	3.0
1	D	362	LYS	3.0
1	D	343	PHE	2.7
1	D	223	ILE	2.7
1	D	344	SER	2.7
1	D	254	VAL	2.6
1	D	261	LEU	2.5
1	D	167	PRO	2.5
1	D	357	ALA	2.5
1	D	351	ILE	2.5
1	B	290	GLY	2.4
1	D	214	HIS	2.4
1	D	341	ALA	2.4
1	D	322	HIS	2.4
1	D	218	SER	2.4
1	B	248	GLY	2.3
1	D	269	TRP	2.3
1	D	334	PHE	2.2
1	D	219	HIS	2.2
1	D	264	TRP	2.2
1	D	255	PRO	2.2
1	D	279	LYS	2.2
1	C	96	ASP	2.1
1	D	156	GLY	2.1

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Mol	Chain	Res	Type	RSRZ
1	D	191	PHE	2.1
1	B	260	ILE	2.1
1	D	225	GLY	2.0
1	D	324	PRO	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
2	SAM	B	401	27/27	0.81	0.36	1.78	93,104,108,110	0
2	SAM	A	401	27/27	0.95	0.18	0.50	44,55,77,81	0
2	SAM	D	401	27/27	0.76	0.39	0.24	124,145,169,179	0
2	SAM	C	401	27/27	0.95	0.17	0.16	48,58,80,90	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.