Full wwPDB X-ray Structure Validation Report ⓘ

Jun 18, 2024 – 02:32 AM EDT

PDB ID	:	5X6F
Title	:	Crystal structure of Phosphopantetheine adenylyltransferase from Pseudomonas aeruginosa
Authors	:	Mondal, A.; Chatterjee, R.; Datta, S.
Deposited on	:	2017-02-21
Resolution	:	2.59 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:

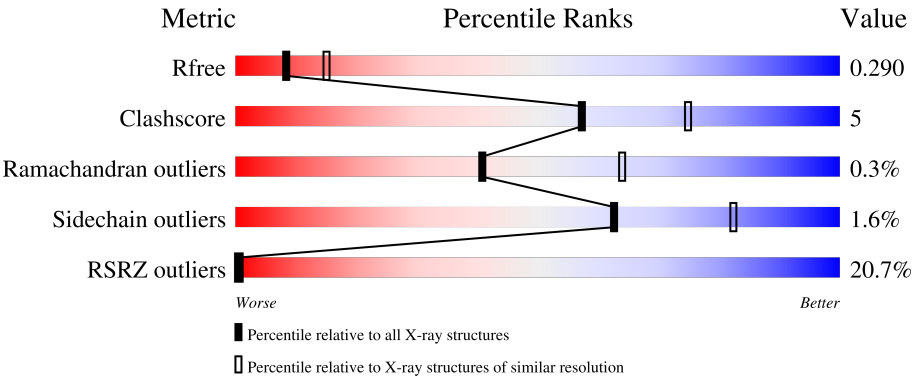
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.37.1
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.37.1

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 2.59 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	3163 (2.60-2.60)
Clashscore	141614	3518 (2.60-2.60)
Ramachandran outliers	138981	3455 (2.60-2.60)
Sidechain outliers	138945	3455 (2.60-2.60)
RSRZ outliers	127900	3104 (2.60-2.60)

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	159	33% 89% 10%
1	B	159	5% 75% 24%
1	C	159	38% 86% 14%
1	D	159	5% 89% 11%
1	E	159	36% 82% 17%

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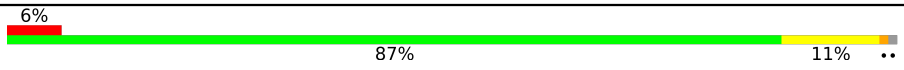
Mol	Chain	Length	Quality of chain
1	F	159	

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	GOL	D	201	-	-	-	X

2 Entry composition (i)

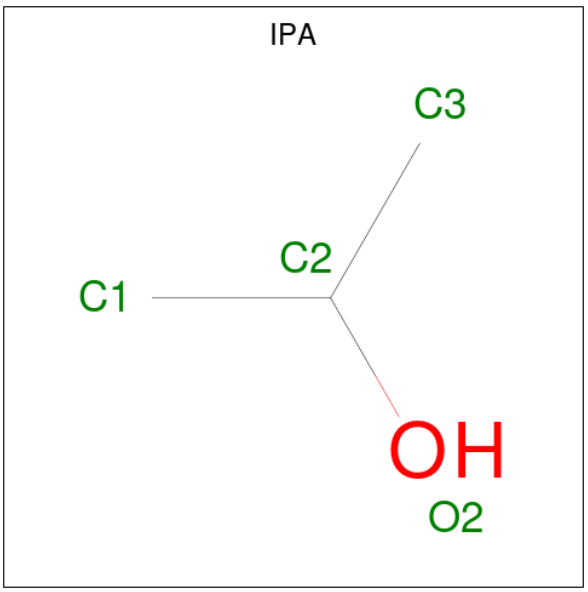
There are 4 unique types of molecules in this entry. The entry contains 7525 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Phosphopantetheine adenylyltransferase.

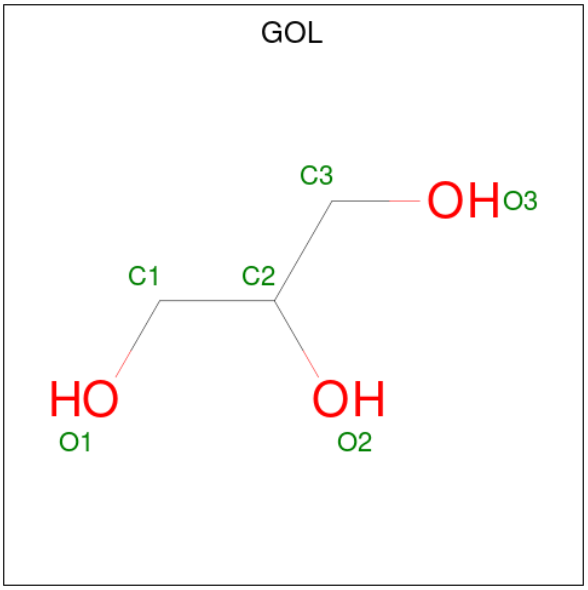
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	158	Total	C	N	O	S	0	0	0
			1244	801	215	225	3			
1	B	158	Total	C	N	O	S	0	0	0
			1244	801	215	225	3			
1	C	158	Total	C	N	O	S	0	0	0
			1244	801	215	225	3			
1	D	158	Total	C	N	O	S	0	0	0
			1244	801	215	225	3			
1	E	158	Total	C	N	O	S	0	0	0
			1244	801	215	225	3			
1	F	158	Total	C	N	O	S	0	0	0
			1244	801	215	225	3			

- Molecule 2 is ISOPROPYL ALCOHOL (three-letter code: IPA) (formula: C_3H_8O).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	B	1	Total C O 4 3 1	0	0
2	F	1	Total C O 4 3 1	0	0

- Molecule 3 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	B	1	Total C O 6 3 3	0	0
3	D	1	Total C O 6 3 3	0	0
3	D	1	Total C O 6 3 3	0	0
3	D	1	Total C O 6 3 3	0	0
3	F	1	Total C O 6 3 3	0	0

- Molecule 4 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total O 1 1	0	0
4	B	8	Total O 8 8	0	0
4	D	8	Total O 8 8	0	0

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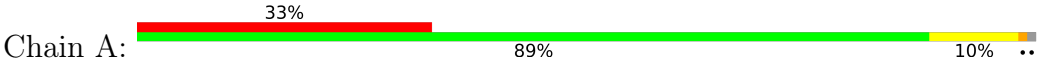
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	E	1	Total O 1 1	0	0
4	F	5	Total O 5 5	0	0

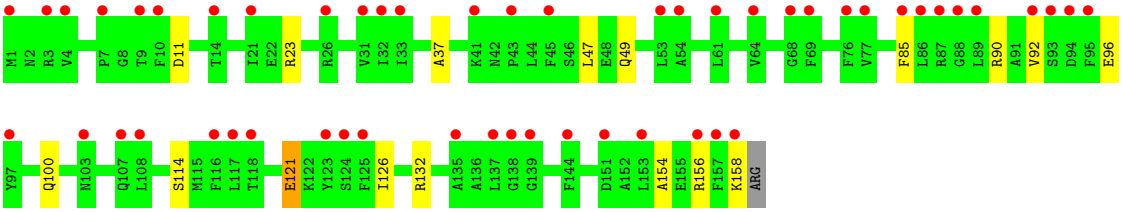
3 Residue-property plots (i)

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: Phosphopantetheine adenylyltransferase

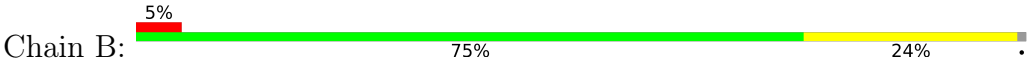
Chain A:

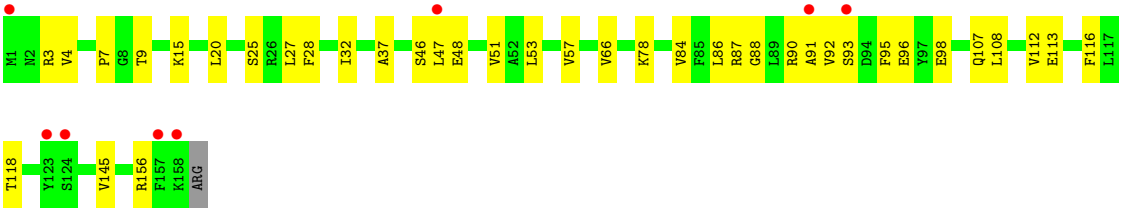




• Molecule 1: Phosphopantetheine adenylyltransferase

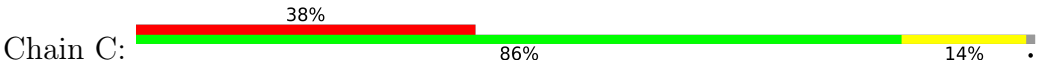
Chain B:

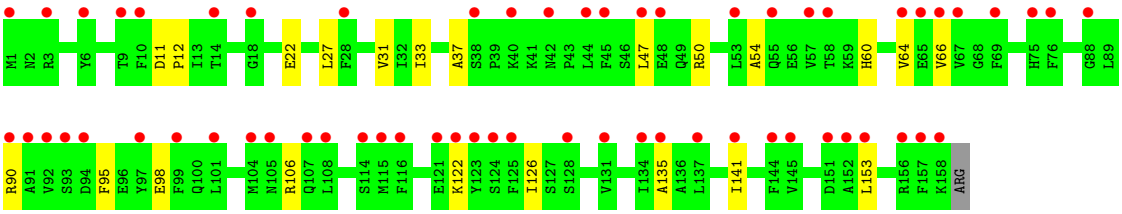




• Molecule 1: Phosphopantetheine adenylyltransferase

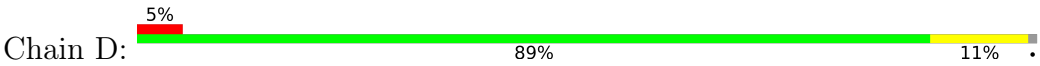
Chain C:

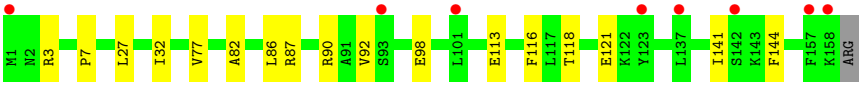




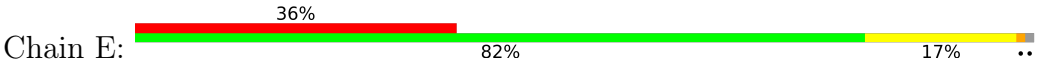
• Molecule 1: Phosphopantetheine adenylyltransferase

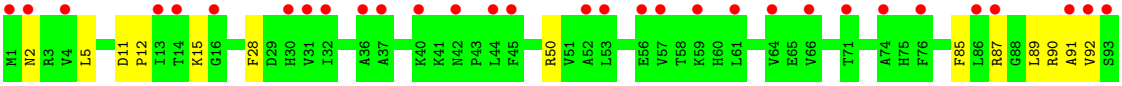
Chain D:



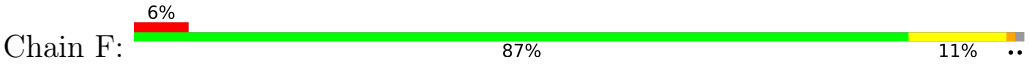


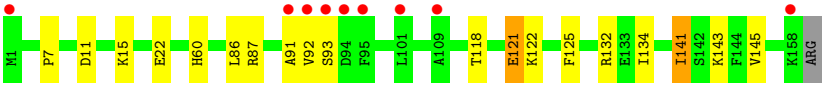
• Molecule 1: Phosphopantetheine adenylyltransferase





• Molecule 1: Phosphopantetheine adenylyltransferase





4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	112.69Å 65.03Å 124.98Å 90.00° 101.25° 90.00°	Depositor
Resolution (Å)	32.39 – 2.59 49.17 – 2.59	Depositor EDS
% Data completeness (in resolution range)	95.2 (32.39-2.59) 90.1 (49.17-2.59)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.26 (at 2.58Å)	Xtriage
Refinement program	PHENIX (1.10.1_2155)	Depositor
R, R_{free}	0.265 , 0.291 0.266 , 0.290	Depositor DCC
R_{free} test set	2000 reflections (7.53%)	wwPDB-VP
Wilson B-factor (Å^2)	42.4	Xtriage
Anisotropy	0.734	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.36 , 36.9	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	0.91	EDS
Total number of atoms	7525	wwPDB-VP
Average B, all atoms (Å^2)	75.0	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 37.08 % 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 4.5262e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

[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: IPA, GOL

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	0.25	0/1271	0.40	0/1720
1	B	0.33	0/1271	0.48	0/1720
1	C	0.25	0/1271	0.39	0/1720
1	D	0.30	0/1271	0.45	0/1720
1	E	0.25	0/1271	0.40	0/1720
1	F	0.30	0/1271	0.46	0/1720
All	All	0.28	0/7626	0.43	0/10320

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	F	0	1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	F	92	VAL	Peptide

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	1244	0	1261	14	0
1	B	1244	0	1261	26	0
1	C	1244	0	1261	11	0
1	D	1244	0	1261	11	0
1	E	1244	0	1261	16	0
1	F	1244	0	1261	11	0
2	B	4	0	8	0	0
2	F	4	0	8	1	0
3	B	6	0	8	1	0
3	D	18	0	24	1	0
3	F	6	0	8	0	0
4	A	1	0	0	0	0
4	B	8	0	0	0	0
4	D	8	0	0	0	0
4	E	1	0	0	0	0
4	F	5	0	0	0	0
All	All	7525	0	7622	74	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 (74) 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:90:ARG:NH2	1:A:126:ILE:O	2.22	0.72
1:C:31:VAL:HB	1:C:64:VAL:HG22	1.74	0.69
1:C:12:PRO:HG3	1:C:153:LEU:HD11	1.77	0.66
1:F:87:ARG:HH22	2:F:201:IPA:H11	1.60	0.66
1:B:107:GLN:O	1:F:143:LYS:NZ	2.27	0.66
1:E:12:PRO:HG3	1:E:153:LEU:HD11	1.82	0.61
1:F:22:GLU:OE2	1:F:60:HIS:NE2	2.29	0.61
1:B:27:LEU:HD11	1:D:113:GLU:HG2	1.82	0.61
1:B:108:LEU:HD11	1:F:134:ILE:HD13	1.83	0.60
1:B:15:LYS:NZ	1:B:145:VAL:O	2.36	0.58
1:B:90:ARG:C	1:B:92:VAL:H	2.07	0.58
1:F:121:GLU:OE2	1:F:122:LYS:N	2.38	0.57
1:E:89:LEU:HD13	1:E:116:PHE:HB3	1.87	0.55
1:E:15:LYS:NZ	1:E:145:VAL:O	2.39	0.55
1:E:135:ALA:HB2	1:E:141:ILE:HD13	1.88	0.55
1:B:116:PHE:HB2	1:D:116:PHE:HB2	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:96:GLU:HG3	1:E:92:VAL:HB	1.89	0.55
1:E:94:ASP:HB3	1:E:97:TYR:HB3	1.89	0.55
1:B:87:ARG:NE	1:B:98:GLU:OE2	2.39	0.55
1:E:87:ARG:NE	1:E:98:GLU:OE2	2.29	0.55
1:B:37:ALA:HB2	1:B:47:LEU:HD22	1.88	0.54
1:C:37:ALA:HB2	1:C:47:LEU:HD22	1.88	0.54
1:A:37:ALA:HB2	1:A:47:LEU:HD22	1.90	0.54
1:C:54:ALA:HB3	1:C:66:VAL:HG11	1.91	0.53
1:C:22:GLU:OE2	1:C:60:HIS:NE2	2.38	0.53
1:B:91:ALA:HA	1:B:95:PHE:HE1	1.74	0.52
1:D:3:ARG:HH11	1:D:32:ILE:HD11	1.74	0.52
1:D:87:ARG:NE	1:D:98:GLU:OE2	2.42	0.51
1:F:11:ASP:O	1:F:132:ARG:NH1	2.37	0.51
1:C:90:ARG:NH2	1:C:126:ILE:O	2.39	0.51
1:E:90:ARG:HH22	1:E:127:SER:HA	1.77	0.50
1:A:154:ALA:O	1:A:158:LYS:HB2	2.12	0.49
1:D:7:PRO:HD2	1:D:86:LEU:O	2.12	0.48
1:F:141:ILE:HD13	1:F:141:ILE:H	1.79	0.48
1:A:23:ARG:NH2	1:C:106:ARG:HD2	2.29	0.48
1:C:122:LYS:HA	1:E:121:GLU:HG3	1.94	0.48
1:C:135:ALA:HB2	1:C:141:ILE:HD13	1.94	0.48
1:D:87:ARG:NH2	3:D:203:GOL:O3	2.47	0.48
1:D:141:ILE:HG22	1:D:144:PHE:HD2	1.78	0.48
1:A:156:ARG:NH1	1:B:46:SER:HB3	2.29	0.47
1:E:97:TYR:HA	1:E:100:GLN:HG2	1.96	0.47
1:B:113:GLU:HG2	1:D:27:LEU:HD11	1.97	0.47
1:A:92:VAL:HG12	1:A:92:VAL:O	2.15	0.47
1:E:85:PHE:HB2	1:E:114:SER:HA	1.98	0.46
1:B:20:LEU:HD21	1:B:88:GLY:HA2	1.97	0.45
1:D:90:ARG:C	1:D:92:VAL:H	2.20	0.45
1:F:15:LYS:NZ	1:F:145:VAL:O	2.44	0.45
1:A:49:GLN:OE1	1:B:156:ARG:NE	2.50	0.45
1:E:11:ASP:HB2	1:E:50:ARG:HD3	1.98	0.45
1:B:7:PRO:HD2	1:B:86:LEU:O	2.17	0.45
1:B:4:VAL:HG22	1:B:84:VAL:HB	1.98	0.45
1:E:111:ASP:OD1	1:E:111:ASP:N	2.39	0.44
1:B:87:ARG:NH2	3:B:202:GOL:O2	2.51	0.44
1:D:121:GLU:HB2	1:F:125:PHE:CE2	2.53	0.44
1:F:7:PRO:HD2	1:F:86:LEU:O	2.18	0.43
1:A:121:GLU:H	1:A:121:GLU:HG3	1.50	0.43
1:C:11:ASP:HB2	1:C:50:ARG:HD3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:2:ASN:HB3	1:E:28:PHE:HD1	1.83	0.43
1:B:3:ARG:HH11	1:B:32:ILE:HD11	1.84	0.42
1:B:78:LYS:HZ1	1:B:112:VAL:HG23	1.84	0.42
1:B:96:GLU:HG3	1:F:93:SER:HB2	2.01	0.42
1:E:158:LYS:HE3	1:E:158:LYS:HA	2.03	0.41
1:A:85:PHE:HB2	1:A:114:SER:HA	2.02	0.41
1:A:158:LYS:HA	1:B:48:GLU:OE2	2.21	0.41
1:C:33:ILE:HB	1:C:66:VAL:HG22	2.01	0.41
1:B:4:VAL:HG21	1:B:28:PHE:CE2	2.55	0.41
1:A:100:GLN:HG2	1:E:125:PHE:HA	2.03	0.41
1:B:53:LEU:O	1:B:57:VAL:HG23	2.21	0.41
1:B:20:LEU:HD12	1:B:20:LEU:HA	1.87	0.40
1:B:51:VAL:HG13	1:B:66:VAL:HG12	2.02	0.40
1:A:11:ASP:O	1:A:132:ARG:NH1	2.44	0.40
1:A:156:ARG:HD2	1:B:46:SER:HB3	2.04	0.40
1:B:4:VAL:HG21	1:B:28:PHE:CZ	2.56	0.40
1:D:77:VAL:HG23	1:D:82:ALA:HB3	2.03	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	156/159 (98%)	150 (96%)	6 (4%)	0	100	100
1	B	156/159 (98%)	149 (96%)	6 (4%)	1 (1%)	25	47
1	C	156/159 (98%)	150 (96%)	6 (4%)	0	100	100
1	D	156/159 (98%)	149 (96%)	7 (4%)	0	100	100
1	E	156/159 (98%)	150 (96%)	5 (3%)	1 (1%)	25	47
1	F	156/159 (98%)	148 (95%)	7 (4%)	1 (1%)	25	47
All	All	936/954 (98%)	896 (96%)	37 (4%)	3 (0%)	41	64

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	E	91	ALA
1	B	93	SER
1	F	91	ALA

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	134/135 (99%)	133 (99%)	1 (1%)	84	94
1	B	134/135 (99%)	131 (98%)	3 (2%)	52	76
1	C	134/135 (99%)	131 (98%)	3 (2%)	52	76
1	D	134/135 (99%)	133 (99%)	1 (1%)	84	94
1	E	134/135 (99%)	132 (98%)	2 (2%)	65	83
1	F	134/135 (99%)	131 (98%)	3 (2%)	52	76
All	All	804/810 (99%)	791 (98%)	13 (2%)	62	82

All (13) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	121	GLU
1	B	9	THR
1	B	25	SER
1	B	118	THR
1	C	27	LEU
1	C	95	PHE
1	C	98	GLU
1	D	118	THR
1	E	5	LEU
1	E	158	LYS
1	F	118	THR
1	F	121	GLU
1	F	141	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

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

7 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	$\#\|Z\| > 2$
3	GOL	B	202	-	5,5,5	0.42	0	5,5,5	0.20	0
3	GOL	F	202	-	5,5,5	0.37	0	5,5,5	0.22	0
3	GOL	D	201	-	5,5,5	0.32	0	5,5,5	0.37	0
3	GOL	D	202	-	5,5,5	0.40	0	5,5,5	0.26	0
3	GOL	D	203	-	5,5,5	0.38	0	5,5,5	0.18	0
2	IPA	B	201	-	3,3,3	0.54	0	3,3,3	0.26	0
2	IPA	F	201	-	3,3,3	0.52	0	3,3,3	0.27	0

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	GOL	B	202	-	-	2/4/4/4	-
3	GOL	F	202	-	-	2/4/4/4	-
3	GOL	D	201	-	-	4/4/4/4	-
3	GOL	D	202	-	-	4/4/4/4	-
3	GOL	D	203	-	-	0/4/4/4	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (12) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	D	201	GOL	C1-C2-C3-O3
3	D	202	GOL	O1-C1-C2-C3
3	D	202	GOL	C1-C2-C3-O3
3	F	202	GOL	O1-C1-C2-C3
3	B	202	GOL	O1-C1-C2-C3
3	D	201	GOL	O1-C1-C2-C3
3	B	202	GOL	O1-C1-C2-O2
3	D	201	GOL	O2-C2-C3-O3
3	D	202	GOL	O1-C1-C2-O2
3	D	202	GOL	O2-C2-C3-O3
3	F	202	GOL	O1-C1-C2-O2
3	D	201	GOL	O1-C1-C2-O2

There are no ring outliers.

3 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	202	GOL	1	0
3	D	203	GOL	1	0
2	F	201	IPA	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^{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	158/159 (99%)	1.69	52 (32%) 0 0	83, 99, 113, 119	0
1	B	158/159 (99%)	0.60	8 (5%) 28 22	38, 49, 65, 71	0
1	C	158/159 (99%)	2.04	61 (38%) 0 0	94, 103, 121, 138	0
1	D	158/159 (99%)	0.58	8 (5%) 28 22	38, 47, 66, 71	0
1	E	158/159 (99%)	1.84	58 (36%) 0 0	88, 100, 116, 121	0
1	F	158/159 (99%)	0.65	9 (5%) 23 18	37, 46, 62, 77	0
All	All	948/954 (99%)	1.23	196 (20%) 1 0	37, 77, 111, 138	0

All (196) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	157	PHE	8.6
1	F	93	SER	8.3
1	C	92	VAL	7.9
1	F	92	VAL	7.9
1	C	145	VAL	7.1
1	C	1	MET	6.8
1	A	144	PHE	6.6
1	A	88	GLY	6.3
1	D	158	LYS	6.2
1	C	44	LEU	6.1
1	C	125	PHE	6.0
1	A	158	LYS	5.8
1	C	158	LYS	5.8
1	E	95	PHE	5.6
1	C	76	PHE	5.5
1	C	122	LYS	5.4
1	C	151	ASP	5.3
1	C	69	PHE	5.3
1	C	66	VAL	5.3

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Mol	Chain	Res	Type	RSRZ
1	E	37	ALA	5.1
1	E	153	LEU	5.0
1	E	40	LYS	4.9
1	D	1	MET	4.9
1	A	53	LEU	4.8
1	A	86	LEU	4.8
1	C	131	VAL	4.8
1	E	1	MET	4.8
1	F	91	ALA	4.7
1	C	42	ASN	4.5
1	A	31	VAL	4.5
1	C	53	LEU	4.4
1	A	95	PHE	4.3
1	C	91	ALA	4.3
1	A	4	VAL	4.2
1	E	32	ILE	4.1
1	A	1	MET	4.1
1	C	101	LEU	4.0
1	A	125	PHE	4.0
1	C	144	PHE	4.0
1	C	141	ILE	4.0
1	C	123	TYR	3.9
1	C	45	PHE	3.9
1	E	114	SER	3.9
1	C	104	MET	3.8
1	E	74	ALA	3.8
1	E	154	ALA	3.8
1	C	93	SER	3.8
1	E	104	MET	3.7
1	C	115	MET	3.7
1	C	57	VAL	3.7
1	E	137	LEU	3.7
1	C	134	ILE	3.6
1	C	75	HIS	3.6
1	A	9	THR	3.6
1	E	126	ILE	3.6
1	D	101	LEU	3.6
1	A	97	TYR	3.6
1	E	4	VAL	3.5
1	C	14	THR	3.5
1	E	45	PHE	3.5
1	A	3	ARG	3.5

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Mol	Chain	Res	Type	RSRZ
1	A	10	PHE	3.5
1	E	36	ALA	3.5
1	E	42	ASN	3.4
1	E	92	VAL	3.4
1	E	149	VAL	3.3
1	C	114	SER	3.3
1	D	93	SER	3.3
1	C	3	ARG	3.3
1	E	96	GLU	3.3
1	E	86	LEU	3.3
1	A	123	TYR	3.3
1	C	65	GLU	3.2
1	C	156	ARG	3.2
1	E	122	LYS	3.2
1	A	93	SER	3.2
1	C	105	ASN	3.2
1	A	135	ALA	3.2
1	E	123	TYR	3.1
1	A	151	ASP	3.1
1	B	93	SER	3.1
1	B	158	LYS	3.1
1	C	28	PHE	3.1
1	E	151	ASP	3.1
1	A	64	VAL	3.1
1	E	115	MET	3.1
1	C	94	ASP	3.0
1	E	87	ARG	3.0
1	A	54	ALA	3.0
1	E	145	VAL	3.0
1	A	92	VAL	2.9
1	C	55	GLN	2.9
1	C	116	PHE	2.9
1	C	10	PHE	2.9
1	E	76	PHE	2.9
1	A	118	THR	2.9
1	C	38	SER	2.9
1	E	59	LYS	2.9
1	C	157	PHE	2.8
1	C	137	LEU	2.8
1	E	116	PHE	2.8
1	E	71	THR	2.8
1	E	44	LEU	2.8

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Mol	Chain	Res	Type	RSRZ
1	F	1	MET	2.8
1	B	123	TYR	2.8
1	F	95	PHE	2.8
1	E	101	LEU	2.8
1	E	64	VAL	2.8
1	E	97	TYR	2.8
1	E	14	THR	2.7
1	C	121	GLU	2.7
1	E	94	ASP	2.7
1	E	107	GLN	2.7
1	A	14	THR	2.7
1	C	99	PHE	2.7
1	E	53	LEU	2.7
1	C	48	GLU	2.7
1	C	18	GLY	2.7
1	C	128	SER	2.7
1	D	123	TYR	2.7
1	A	107	GLN	2.7
1	C	135	ALA	2.7
1	A	45	PHE	2.7
1	C	9	THR	2.7
1	A	137	LEU	2.7
1	B	157	PHE	2.7
1	C	40	LYS	2.6
1	A	153	LEU	2.6
1	B	91	ALA	2.6
1	D	142	SER	2.6
1	A	156	ARG	2.6
1	A	89	LEU	2.6
1	E	16	GLY	2.6
1	C	97	TYR	2.6
1	D	137	LEU	2.5
1	A	85	PHE	2.5
1	B	124	SER	2.5
1	A	61	LEU	2.5
1	D	157	PHE	2.5
1	E	56	GLU	2.5
1	A	87	ARG	2.5
1	F	158	LYS	2.5
1	F	94	ASP	2.5
1	E	30	HIS	2.4
1	E	144	PHE	2.4

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Mol	Chain	Res	Type	RSRZ
1	B	1	MET	2.4
1	A	103	ASN	2.4
1	C	47	LEU	2.4
1	C	108	LEU	2.4
1	C	64	VAL	2.4
1	A	94	ASP	2.4
1	A	108	LEU	2.4
1	E	157	PHE	2.4
1	E	143	LYS	2.4
1	E	118	THR	2.4
1	E	131	VAL	2.4
1	F	101	LEU	2.4
1	E	57	VAL	2.3
1	C	58	THR	2.3
1	C	90	ARG	2.3
1	A	33	ILE	2.3
1	A	26	ARG	2.3
1	E	61	LEU	2.3
1	A	77	VAL	2.2
1	A	124	SER	2.2
1	A	68	GLY	2.2
1	A	138	GLY	2.2
1	A	117	LEU	2.2
1	C	153	LEU	2.2
1	E	31	VAL	2.2
1	E	91	ALA	2.2
1	F	109	ALA	2.2
1	A	69	PHE	2.1
1	E	125	PHE	2.1
1	E	2	ASN	2.1
1	A	41	LYS	2.1
1	A	43	PRO	2.1
1	E	100	GLN	2.1
1	A	7	PRO	2.1
1	A	139	GLY	2.1
1	E	66	VAL	2.1
1	A	76	PHE	2.1
1	A	116	PHE	2.1
1	C	107	GLN	2.1
1	C	67	VAL	2.1
1	C	88	GLY	2.1
1	E	156	ARG	2.1

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Mol	Chain	Res	Type	RSRZ
1	A	32	ILE	2.0
1	C	124	SER	2.0
1	E	93	SER	2.0
1	B	47	LEU	2.0
1	C	152	ALA	2.0
1	E	52	ALA	2.0
1	A	21	ILE	2.0
1	C	6	TYR	2.0
1	E	13	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
3	GOL	D	201	6/6	0.72	0.41	47,47,48,49	0
3	GOL	F	202	6/6	0.73	0.23	44,48,49,50	0
2	IPA	F	201	4/4	0.75	0.29	47,47,47,47	0
2	IPA	B	201	4/4	0.82	0.24	51,52,52,53	0
3	GOL	B	202	6/6	0.85	0.21	46,48,50,51	0
3	GOL	D	202	6/6	0.86	0.28	51,51,52,53	0
3	GOL	D	203	6/6	0.92	0.12	47,47,47,47	0

6.5 Other polymers (i)

There are no such residues in this entry.