Full wwPDB X-ray Structure Validation Report ⓘ

Nov 7, 2023 – 10:03 AM EST

PDB ID	:	8FFT
Title	:	Structure of GntC, a PLP-dependent enzyme catalyzing L-enduracididine biosynthesis from (S)-4-hydroxy-L-arginine
Authors	:	Chen, P.Y.-T.; Lima, S.T.; Chekan, J.R.; Moore, B.S.
Deposited on	:	2022-12-10
Resolution	:	2.10 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:

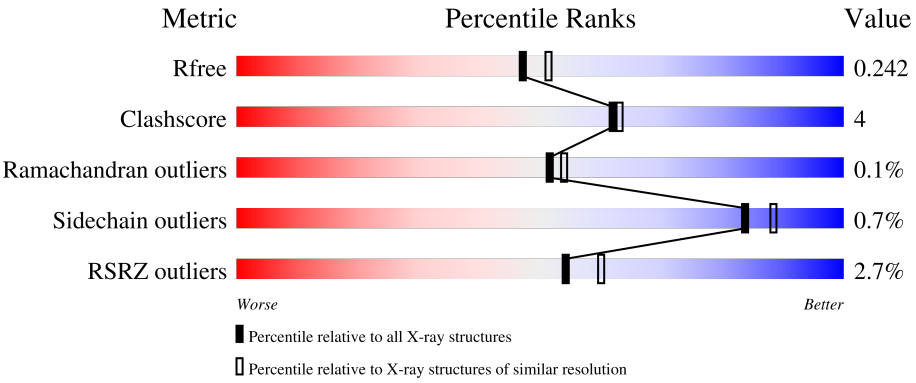
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

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 2.10 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	5197 (2.10-2.10)
Clashscore	141614	5710 (2.10-2.10)
Ramachandran outliers	138981	5647 (2.10-2.10)
Sidechain outliers	138945	5648 (2.10-2.10)
RSRZ outliers	127900	5083 (2.10-2.10)

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	370	83% 11% 6%
1	B	370	3% 80% 14% • 5%
1	C	370	2% 81% 12% • 6%
1	D	370	4% 85% 10% 5%

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 11179 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 Aminotransferase class I/II-fold pyridoxal phosphate-dependent enzyme.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	347	Total	C	N	O	P	S	0	1	0
			2753	1770	463	512	1	7			
1	B	350	Total	C	N	O	P	S	0	0	0
			2776	1785	466	517	1	7			
1	C	346	Total	C	N	O	P	S	0	0	0
			2748	1768	462	510	1	7			
1	D	352	Total	C	N	O	P	S	0	0	0
			2794	1793	469	524	1	7			

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

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

- Molecule 3 is water.

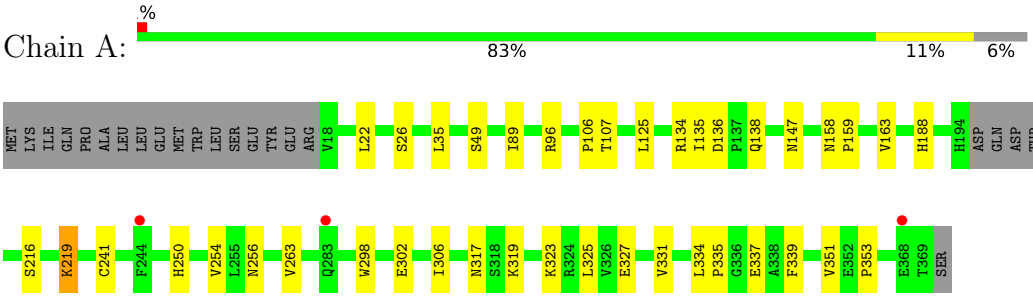
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	36	Total	O	0	0
			36	36		
3	B	20	Total	O	0	0
			20	20		
3	C	26	Total	O	0	0
			26	26		
3	D	21	Total	O	0	0
			21	21		

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.

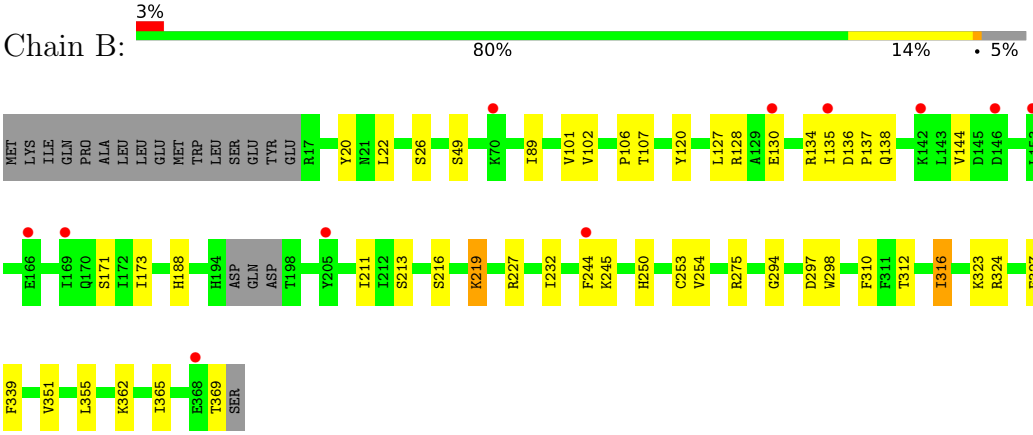
• Molecule 1: Aminotransferase class I/II-fold pyridoxal phosphate-dependent enzyme

Chain A:



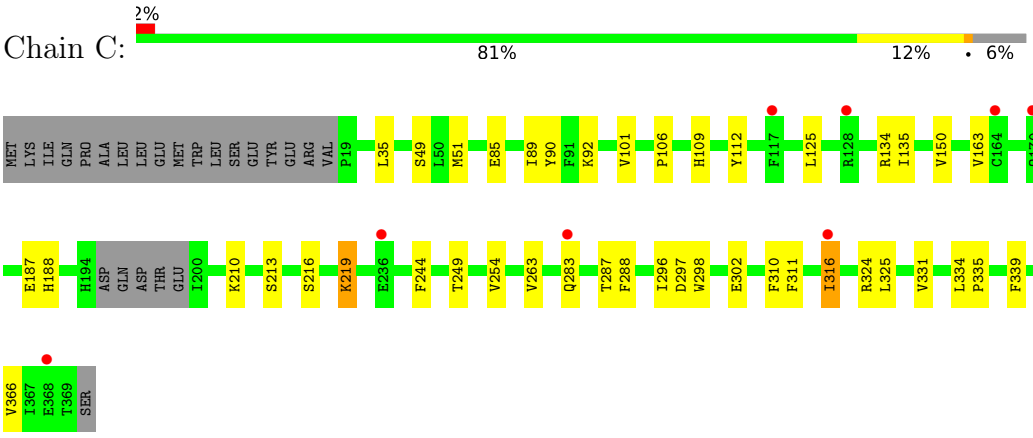
• Molecule 1: Aminotransferase class I/II-fold pyridoxal phosphate-dependent enzyme

Chain B:



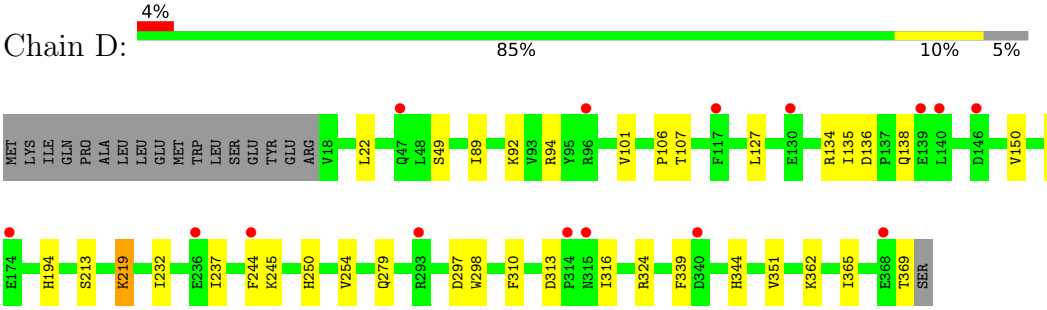
• Molecule 1: Aminotransferase class I/II-fold pyridoxal phosphate-dependent enzyme

Chain C:



• Molecule 1: Aminotransferase class I/II-fold pyridoxal phosphate-dependent enzyme

Chain D:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	60.85Å 158.16Å 73.23Å 90.00° 90.01° 90.00°	Depositor
Resolution (Å)	73.23 – 2.10 73.23 – 2.10	Depositor EDS
% Data completeness (in resolution range)	93.1 (73.23-2.10) 93.1 (73.23-2.10)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.12	Depositor
$< I/\sigma(I) >$ [1]	2.24 (at 2.10Å)	Xtriage
Refinement program	PHENIX 1.18_3845	Depositor
R, R_{free}	0.220 , 0.242 0.220 , 0.242	Depositor DCC
R_{free} test set	3663 reflections (4.88%)	wwPDB-VP
Wilson B-factor (Å^2)	29.0	Xtriage
Anisotropy	0.431	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.35 , 17.4	EDS
L-test for twinning[2]	$< \|L\| > = 0.47$, $< L^2 > = 0.30$	Xtriage
Estimated twinning fraction	0.227 for h,-k,-l	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	11179	wwPDB-VP
Average B, all atoms (Å^2)	32.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.29% 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: LLP, 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	0.30	0/2792	0.50	0/3796
1	B	0.28	0/2812	0.48	0/3824
1	C	0.28	0/2784	0.48	0/3784
1	D	0.27	0/2831	0.47	0/3851
All	All	0.28	0/11219	0.48	0/15255

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	2753	0	2749	23	0
1	B	2776	0	2775	29	0
1	C	2748	0	2752	27	0
1	D	2794	0	2783	20	0
2	A	2	0	0	0	0
2	B	1	0	0	0	0
2	C	1	0	0	0	0
2	D	1	0	0	0	0
3	A	36	0	0	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	20	0	0	1	0
3	C	26	0	0	0	0
3	D	21	0	0	0	0
All	All	11179	0	11059	98	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 4.

All (98) 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:B:324:ARG:NH2	1:B:369:THR:OG1	2.09	0.85
1:D:134:ARG:NH2	1:D:163:VAL:O	2.25	0.70
1:C:180:ASN:HA	1:C:210:LYS:HZ1	1.58	0.69
1:D:245:LYS:NZ	1:D:250:HIS:O	2.27	0.67
1:A:323:LYS:NZ	1:A:327:GLU:OE2	2.27	0.66
1:D:127:LEU:HD21	1:D:135:ILE:HD13	1.78	0.66
1:B:127:LEU:HD21	1:B:135:ILE:HD13	1.78	0.65
1:B:134:ARG:NH2	1:B:163:VAL:O	2.29	0.65
1:B:245:LYS:NZ	1:B:250:HIS:O	2.31	0.64
1:A:317:ASN:ND2	1:A:337:GLU:OE2	2.31	0.64
1:A:134:ARG:NH2	1:A:163:VAL:O	2.31	0.63
1:B:323:LYS:NZ	1:B:327:GLU:OE2	2.31	0.62
1:C:324:ARG:NH2	1:C:366:VAL:HA	2.16	0.60
1:D:324:ARG:NH2	1:D:369:THR:OG1	2.34	0.60
1:B:106:PRO:HB3	1:B:339:PHE:HB3	1.84	0.60
1:A:106:PRO:HB3	1:A:339:PHE:HB3	1.83	0.59
1:C:106:PRO:HB3	1:C:339:PHE:HB3	1.83	0.59
1:D:22:LEU:HD11	1:D:351:VAL:HG21	1.82	0.59
1:C:288:PHE:HE2	1:C:296:ILE:HD12	1.69	0.57
1:D:106:PRO:HB3	1:D:339:PHE:HB3	1.86	0.57
1:C:163:VAL:HG23	1:C:302:GLU:HB2	1.85	0.56
1:D:313:ASP:HB3	1:D:316:ILE:HG12	1.87	0.56
1:D:89:ILE:HD13	1:D:244:PHE:HD2	1.71	0.56
1:C:35:LEU:HD11	1:C:263:VAL:HG22	1.89	0.55
1:A:35:LEU:HD11	1:A:263:VAL:HG22	1.88	0.55
1:D:219:LLP:H4'1	1:D:219:LLP:OP4	2.06	0.54
1:C:288:PHE:CE2	1:C:296:ILE:HD12	2.43	0.54
1:C:219:LLP:OP4	1:C:219:LLP:H4'1	2.08	0.53
1:C:311:PHE:HB3	1:C:316:ILE:HD11	1.89	0.53
1:A:49:SER:O	1:A:254:VAL:HG11	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:219:LLP:OP4	1:B:219:LLP:H4'1	2.08	0.53
1:C:49:SER:O	1:C:254:VAL:HG11	2.09	0.52
1:B:128:ARG:HB3	1:B:130:GLU:OE1	2.09	0.52
1:A:205:TYR:O	3:A:501:HOH:O	2.19	0.52
1:C:125:LEU:HD21	1:C:135:ILE:HG23	1.92	0.51
1:A:219:LLP:H4'1	1:A:219:LLP:OP4	2.10	0.51
1:C:288:PHE:HB2	1:C:360:LEU:HD13	1.92	0.51
1:B:107:THR:HA	1:B:158:ASN:O	2.12	0.50
1:B:22:LEU:HD11	1:B:351:VAL:HG21	1.93	0.50
1:D:107:THR:HA	1:D:158:ASN:O	2.12	0.50
1:D:310:PHE:HB3	1:D:344:HIS:CD2	2.47	0.49
1:B:188:HIS:CE1	1:B:216:SER:HB3	2.47	0.49
1:B:89:ILE:HD13	1:B:244:PHE:HD2	1.78	0.49
1:C:134:ARG:NH2	1:C:163:VAL:O	2.46	0.49
1:D:101:VAL:HG12	1:D:150:VAL:HB	1.94	0.49
1:B:136:ASP:OD1	1:B:138:GLN:HG2	2.12	0.48
1:B:362:LYS:HD3	1:B:365:ILE:HD12	1.95	0.48
1:C:89:ILE:HD13	1:C:244:PHE:HD2	1.79	0.48
1:C:283:GLN:NE2	1:C:287:THR:OG1	2.46	0.48
1:A:334:LEU:HD12	1:A:335:PRO:HD2	1.96	0.47
1:A:317:ASN:OD1	1:A:319:LYS:HB3	2.14	0.47
1:B:294:GLY:O	1:B:312:THR:OG1	2.19	0.47
1:D:194:HIS:O	1:D:279:GLN:NE2	2.48	0.47
1:A:96:ARG:NH2	1:A:147:ASN:HA	2.30	0.46
1:B:49:SER:O	1:B:254:VAL:HG11	2.16	0.46
1:C:187:GLU:OE1	1:C:213:SER:OG	2.34	0.46
1:C:297:ASP:HB3	1:C:310:PHE:CZ	2.51	0.46
1:B:128:ARG:HB3	1:B:130:GLU:CD	2.36	0.46
1:D:362:LYS:HD3	1:D:365:ILE:HD12	1.97	0.46
1:C:188:HIS:CE1	1:C:216:SER:HB3	2.52	0.45
1:D:92:LYS:HG2	1:D:244:PHE:CZ	2.52	0.45
1:B:173:ILE:HD11	1:B:211:ILE:HD11	1.99	0.45
1:A:256:ASN:ND2	1:B:253:CYS:SG	2.91	0.44
1:A:325:LEU:HG	1:A:331:VAL:HB	1.98	0.44
1:B:101:VAL:HG23	1:B:120:TYR:CD1	2.52	0.44
1:A:26:SER:HB3	1:A:219:LLP:HD2	2.00	0.44
1:C:334:LEU:HD12	1:C:335:PRO:HD2	1.99	0.44
1:D:94:ARG:NH1	1:D:237:ILE:HD13	2.33	0.44
1:C:324:ARG:HD3	1:C:366:VAL:HG13	1.99	0.44
1:C:85:GLU:OE2	1:C:249:THR:OG1	2.28	0.43
1:B:219:LLP:OP3	1:B:227:ARG:NH1	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:324:ARG:HH22	1:C:366:VAL:HA	1.81	0.43
1:A:125:LEU:HD21	1:A:135:ILE:HG23	2.01	0.43
1:A:353:PRO:HG2	3:A:513:HOH:O	2.19	0.43
1:D:213:SER:HB3	1:D:232:ILE:HB	2.00	0.43
1:B:137:PRO:HB3	1:B:171:SER:HB3	2.01	0.43
1:A:22:LEU:HD11	1:A:351:VAL:HG21	2.01	0.42
1:D:49:SER:O	1:D:254:VAL:HG11	2.19	0.42
1:D:136:ASP:OD1	1:D:138:GLN:HG2	2.19	0.42
1:A:89:ILE:HD12	1:A:241:CYS:HB3	2.00	0.42
1:B:20:TYR:HB3	1:B:355:LEU:HD11	2.01	0.42
1:C:109:HIS:HA	1:C:112:TYR:CE2	2.53	0.42
1:A:188:HIS:CE1	1:A:216:SER:HB3	2.54	0.42
1:B:316:ILE:H	1:B:316:ILE:HG12	1.65	0.42
1:A:107:THR:HA	1:A:158:ASN:O	2.19	0.42
1:B:297:ASP:HB3	1:B:310:PHE:CZ	2.54	0.42
1:A:136:ASP:OD1	1:A:138:GLN:HG2	2.19	0.42
1:C:92:LYS:HG2	1:C:244:PHE:CZ	2.55	0.42
1:C:101:VAL:HG12	1:C:150:VAL:HB	2.01	0.42
1:B:102:VAL:HG21	1:B:144:VAL:HG22	2.03	0.41
1:A:159:PRO:HA	1:A:306:ILE:HD13	2.02	0.41
1:B:26:SER:HB2	3:B:503:HOH:O	2.19	0.41
1:B:213:SER:HB3	1:B:232:ILE:HB	2.01	0.41
1:C:90:TYR:OH	1:C:182:GLU:OE1	2.30	0.41
1:A:163:VAL:HG23	1:A:302:GLU:HB2	2.02	0.41
1:B:334:LEU:HD12	1:B:335:PRO:HD2	2.03	0.41
1:D:297:ASP:HB3	1:D:310:PHE:CZ	2.56	0.40
1:C:325:LEU:HG	1:C:331:VAL:HB	2.04	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	343/370 (93%)	335 (98%)	7 (2%)	1 (0%)	41 41
1	B	345/370 (93%)	337 (98%)	8 (2%)	0	100 100
1	C	341/370 (92%)	333 (98%)	8 (2%)	0	100 100
1	D	349/370 (94%)	339 (97%)	10 (3%)	0	100 100
All	All	1378/1480 (93%)	1344 (98%)	33 (2%)	1 (0%)	51 54

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	250	HIS

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	300/323 (93%)	299 (100%)	1 (0%)	92 95
1	B	303/323 (94%)	300 (99%)	3 (1%)	76 82
1	C	300/323 (93%)	297 (99%)	3 (1%)	76 82
1	D	305/323 (94%)	304 (100%)	1 (0%)	92 95
All	All	1208/1292 (94%)	1200 (99%)	8 (1%)	84 88

All (8) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	298	TRP
1	B	275	ARG
1	B	298	TRP
1	B	316	ILE
1	C	51	MET
1	C	298	TRP
1	C	316	ILE
1	D	298	TRP

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

sidechains are listed below:

Mol	Chain	Res	Type
1	A	266	HIS
1	B	100	ASN
1	B	194	HIS
1	C	283	GLN
1	C	315	ASN
1	D	279	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

4 non-standard protein/DNA/RNA residues 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	$\#\|Z\| > 2$
1	LLP	B	219	1	23,24,25	0.25	0	25,32,34	0.93	1 (4%)
1	LLP	A	219	1	23,24,25	0.34	0	25,32,34	1.17	1 (4%)
1	LLP	D	219	1	23,24,25	0.22	0	25,32,34	0.89	1 (4%)
1	LLP	C	219	1	23,24,25	0.25	0	25,32,34	0.86	1 (4%)

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
1	LLP	B	219	1	-	5/16/17/19	0/1/1/1
1	LLP	A	219	1	-	4/16/17/19	0/1/1/1
1	LLP	D	219	1	-	3/16/17/19	0/1/1/1
1	LLP	C	219	1	-	5/16/17/19	0/1/1/1

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	219	LLP	OP4-C5'-C5	5.32	119.48	109.35
1	B	219	LLP	OP4-C5'-C5	3.65	116.31	109.35
1	C	219	LLP	OP4-C5'-C5	3.50	116.01	109.35
1	D	219	LLP	OP4-C5'-C5	3.25	115.54	109.35

There are no chirality outliers.

All (17) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	219	LLP	C4-C5-C5'-OP4
1	A	219	LLP	C6-C5-C5'-OP4
1	A	219	LLP	O-C-CA-CB
1	B	219	LLP	C4-C5-C5'-OP4
1	B	219	LLP	C6-C5-C5'-OP4
1	B	219	LLP	O-C-CA-CB
1	C	219	LLP	C4-C5-C5'-OP4
1	C	219	LLP	C6-C5-C5'-OP4
1	C	219	LLP	O-C-CA-CB
1	D	219	LLP	C4-C5-C5'-OP4
1	D	219	LLP	C6-C5-C5'-OP4
1	A	219	LLP	CG-CD-CE-NZ
1	B	219	LLP	CG-CD-CE-NZ
1	C	219	LLP	CG-CD-CE-NZ
1	D	219	LLP	CG-CD-CE-NZ
1	C	219	LLP	C5'-OP4-P-OP1
1	B	219	LLP	C5'-OP4-P-OP3

There are no ring outliers.

4 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	B	219	LLP	2	0
1	A	219	LLP	2	0
1	D	219	LLP	1	0
1	C	219	LLP	1	0

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 5 ligands modelled in this entry, 5 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

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	346/370 (93%)	0.24	3 (0%) 84 86	19, 27, 45, 81	0
1	B	349/370 (94%)	0.31	11 (3%) 47 54	21, 31, 56, 76	0
1	C	345/370 (93%)	0.26	9 (2%) 56 61	19, 28, 53, 95	0
1	D	351/370 (94%)	0.33	15 (4%) 35 41	22, 32, 58, 82	0
All	All	1391/1480 (93%)	0.28	38 (2%) 54 60	19, 29, 54, 95	0

All (38) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	283	GLN	3.5
1	B	368	GLU	3.4
1	D	314	PRO	3.3
1	D	96	ARG	3.3
1	B	166	GLU	3.2
1	A	244	PHE	3.2
1	D	244	PHE	3.2
1	D	368	GLU	3.1
1	D	315	ASN	3.1
1	C	316	ILE	3.0
1	D	47	GLN	3.0
1	C	368	GLU	2.9
1	B	70	LYS	2.8
1	A	283	GLN	2.7
1	D	117	PHE	2.7
1	D	146	ASP	2.6
1	C	117	PHE	2.6
1	B	169	ILE	2.5
1	B	244	PHE	2.5
1	D	174	GLU	2.3
1	C	128	ARG	2.3

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Mol	Chain	Res	Type	RSRZ
1	C	170	GLN	2.3
1	C	236	GLU	2.3
1	B	142	LYS	2.3
1	C	164	CYS	2.2
1	B	205	TYR	2.2
1	B	130	GLU	2.2
1	B	153	LEU	2.2
1	D	293	ARG	2.2
1	B	146	ASP	2.2
1	D	236	GLU	2.1
1	A	368	GLU	2.1
1	C	355	LEU	2.1
1	D	140	LEU	2.1
1	D	139	GLU	2.1
1	B	135	ILE	2.1
1	D	130	GLU	2.1
1	D	340	ASP	2.0

6.2 Non-standard residues in protein, DNA, RNA chains (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
1	LLP	A	219	24/25	0.89	0.17	23,28,30,30	0
1	LLP	C	219	24/25	0.89	0.16	22,28,30,31	0
1	LLP	B	219	24/25	0.93	0.14	25,31,34,34	0
1	LLP	D	219	24/25	0.93	0.14	23,29,32,33	0

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
2	MG	D	401	1/1	0.86	0.08	35,35,35,35	0
2	MG	A	402	1/1	0.93	0.09	36,36,36,36	0
2	MG	B	401	1/1	0.95	0.09	33,33,33,33	0
2	MG	C	401	1/1	0.99	0.03	24,24,24,24	0
2	MG	A	401	1/1	0.99	0.06	22,22,22,22	0

6.5 Other polymers (i)

There are no such residues in this entry.