Full wwPDB X-ray Structure Validation Report (i)

Jun 23, 2024 – 05:22 AM EDT

PDB ID	:	4PNH
Title	:	Crystal structure of D,D-heptose 1,7-bisphosphate phosphatase from Burkholderia Thailandensis
Authors	:	Kim, M.S.; Shin, D.H.
Deposited on	:	2014-05-23
Resolution	:	2.66 Å(reported)

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

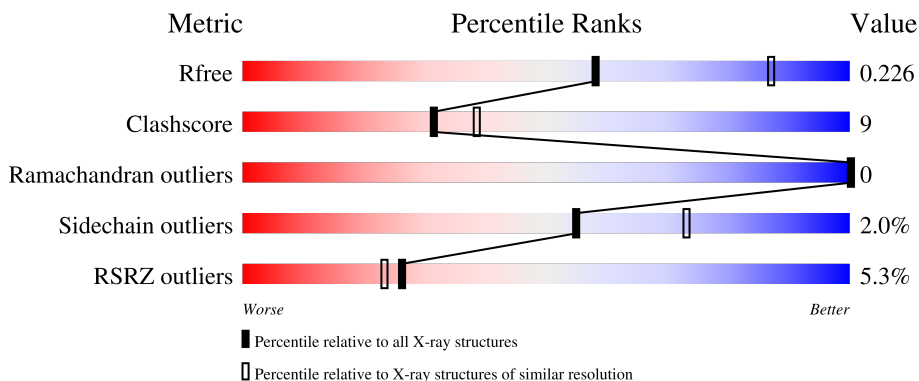|		
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.37.1
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation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

1   Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 2.66 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	Percentile Ranks	Value
Rfree		0.226
Clashscore		9
Ramachandran outliers		0
Sidechain outliers		2.0%
RSRZ outliers		5.3%

Worse   *Better*

▮ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1332 (2.68-2.64)
Clashscore	141614	1374 (2.68-2.64)
Ramachandran outliers	138981	1349 (2.68-2.64)
Sidechain outliers	138945	1349 (2.68-2.64)
RSRZ outliers	127900	1318 (2.68-2.64)

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	199	4% 64% 13% • 22%
1	B	199	4% 64% 12% • 22%
1	C	199	3% 65% 12% • 22%
1	D	199	5% 56% 22% • 22%
1	E	199	3% 68% 10% 22%

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Mol	Chain	Length	Quality of chain
1	F	199	5% / 67% / 10% / 22%
1	G	199	4% / 64% / 14% / 22%
1	H	199	6% / 62% / 16% / 22%
1	I	199	3% / 64% / 13% / 22%
1	J	199	3% / 62% / 16% / 22%
1	K	199	5% / 59% / 17% / 22%
1	L	199	6% / 62% / 15% / 22%

2   Entry composition ⓘ

There are 2 unique types of molecules in this entry. The entry contains 13977 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 D,D-heptose 1,7-bisphosphate phosphatase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	155	Total	C	N	O	S	0	0	0
			1164	738	213	207	6			
1	B	155	Total	C	N	O	S	0	0	0
			1164	738	213	207	6			
1	C	155	Total	C	N	O	S	0	0	0
			1164	738	213	207	6			
1	D	155	Total	C	N	O	S	0	0	0
			1164	738	213	207	6			
1	E	155	Total	C	N	O	S	0	0	0
			1164	738	213	207	6			
1	F	155	Total	C	N	O	S	0	0	0
			1164	738	213	207	6			
1	G	155	Total	C	N	O	S	0	0	0
			1164	738	213	207	6			
1	H	155	Total	C	N	O	S	0	0	0
			1164	738	213	207	6			
1	I	155	Total	C	N	O	S	0	0	0
			1164	738	213	207	6			
1	J	155	Total	C	N	O	S	0	0	0
			1164	738	213	207	6			
1	K	155	Total	C	N	O	S	0	0	0
			1164	738	213	207	6			
1	L	155	Total	C	N	O	S	0	0	0
			1164	738	213	207	6			

There are 144 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-11	MET	-	expression tag	UNP Q2T109
A	-10	HIS	-	expression tag	UNP Q2T109
A	-9	HIS	-	expression tag	UNP Q2T109
A	-8	HIS	-	expression tag	UNP Q2T109
A	-7	HIS	-	expression tag	UNP Q2T109

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Chain	Residue	Modelled	Actual	Comment	Reference
A	-6	HIS	-	expression tag	UNP Q2T109
A	-5	HIS	-	expression tag	UNP Q2T109
A	-4	GLY	-	expression tag	UNP Q2T109
A	-3	GLY	-	expression tag	UNP Q2T109
A	-2	GLY	-	expression tag	UNP Q2T109
A	-1	GLY	-	expression tag	UNP Q2T109
A	0	GLY	-	expression tag	UNP Q2T109
B	-11	MET	-	expression tag	UNP Q2T109
B	-10	HIS	-	expression tag	UNP Q2T109
B	-9	HIS	-	expression tag	UNP Q2T109
B	-8	HIS	-	expression tag	UNP Q2T109
B	-7	HIS	-	expression tag	UNP Q2T109
B	-6	HIS	-	expression tag	UNP Q2T109
B	-5	HIS	-	expression tag	UNP Q2T109
B	-4	GLY	-	expression tag	UNP Q2T109
B	-3	GLY	-	expression tag	UNP Q2T109
B	-2	GLY	-	expression tag	UNP Q2T109
B	-1	GLY	-	expression tag	UNP Q2T109
B	0	GLY	-	expression tag	UNP Q2T109
C	-11	MET	-	expression tag	UNP Q2T109
C	-10	HIS	-	expression tag	UNP Q2T109
C	-9	HIS	-	expression tag	UNP Q2T109
C	-8	HIS	-	expression tag	UNP Q2T109
C	-7	HIS	-	expression tag	UNP Q2T109
C	-6	HIS	-	expression tag	UNP Q2T109
C	-5	HIS	-	expression tag	UNP Q2T109
C	-4	GLY	-	expression tag	UNP Q2T109
C	-3	GLY	-	expression tag	UNP Q2T109
C	-2	GLY	-	expression tag	UNP Q2T109
C	-1	GLY	-	expression tag	UNP Q2T109
C	0	GLY	-	expression tag	UNP Q2T109
D	-11	MET	-	expression tag	UNP Q2T109
D	-10	HIS	-	expression tag	UNP Q2T109
D	-9	HIS	-	expression tag	UNP Q2T109
D	-8	HIS	-	expression tag	UNP Q2T109
D	-7	HIS	-	expression tag	UNP Q2T109
D	-6	HIS	-	expression tag	UNP Q2T109
D	-5	HIS	-	expression tag	UNP Q2T109
D	-4	GLY	-	expression tag	UNP Q2T109
D	-3	GLY	-	expression tag	UNP Q2T109
D	-2	GLY	-	expression tag	UNP Q2T109
D	-1	GLY	-	expression tag	UNP Q2T109

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Chain	Residue	Modelled	Actual	Comment	Reference
D	0	GLY	-	expression tag	UNP Q2T109
E	-11	MET	-	expression tag	UNP Q2T109
E	-10	HIS	-	expression tag	UNP Q2T109
E	-9	HIS	-	expression tag	UNP Q2T109
E	-8	HIS	-	expression tag	UNP Q2T109
E	-7	HIS	-	expression tag	UNP Q2T109
E	-6	HIS	-	expression tag	UNP Q2T109
E	-5	HIS	-	expression tag	UNP Q2T109
E	-4	GLY	-	expression tag	UNP Q2T109
E	-3	GLY	-	expression tag	UNP Q2T109
E	-2	GLY	-	expression tag	UNP Q2T109
E	-1	GLY	-	expression tag	UNP Q2T109
E	0	GLY	-	expression tag	UNP Q2T109
F	-11	MET	-	expression tag	UNP Q2T109
F	-10	HIS	-	expression tag	UNP Q2T109
F	-9	HIS	-	expression tag	UNP Q2T109
F	-8	HIS	-	expression tag	UNP Q2T109
F	-7	HIS	-	expression tag	UNP Q2T109
F	-6	HIS	-	expression tag	UNP Q2T109
F	-5	HIS	-	expression tag	UNP Q2T109
F	-4	GLY	-	expression tag	UNP Q2T109
F	-3	GLY	-	expression tag	UNP Q2T109
F	-2	GLY	-	expression tag	UNP Q2T109
F	-1	GLY	-	expression tag	UNP Q2T109
F	0	GLY	-	expression tag	UNP Q2T109
G	-11	MET	-	expression tag	UNP Q2T109
G	-10	HIS	-	expression tag	UNP Q2T109
G	-9	HIS	-	expression tag	UNP Q2T109
G	-8	HIS	-	expression tag	UNP Q2T109
G	-7	HIS	-	expression tag	UNP Q2T109
G	-6	HIS	-	expression tag	UNP Q2T109
G	-5	HIS	-	expression tag	UNP Q2T109
G	-4	GLY	-	expression tag	UNP Q2T109
G	-3	GLY	-	expression tag	UNP Q2T109
G	-2	GLY	-	expression tag	UNP Q2T109
G	-1	GLY	-	expression tag	UNP Q2T109
G	0	GLY	-	expression tag	UNP Q2T109
H	-11	MET	-	expression tag	UNP Q2T109
H	-10	HIS	-	expression tag	UNP Q2T109
H	-9	HIS	-	expression tag	UNP Q2T109
H	-8	HIS	-	expression tag	UNP Q2T109
H	-7	HIS	-	expression tag	UNP Q2T109

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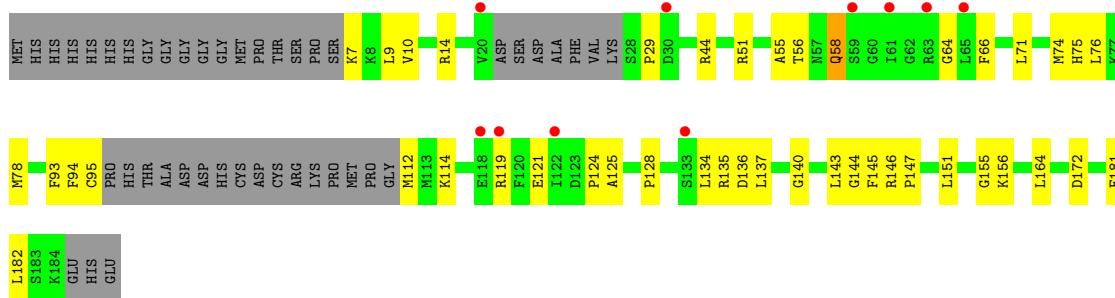| Chain	Residue	Modelled	Actual	Comment	Reference
H	-6	HIS	-	expression tag	UNP Q2T109
H	-5	HIS	-	expression tag	UNP Q2T109
H	-4	GLY	-	expression tag	UNP Q2T109
H	-3	GLY	-	expression tag	UNP Q2T109
H	-2	GLY	-	expression tag	UNP Q2T109
H	-1	GLY	-	expression tag	UNP Q2T109
H	0	GLY	-	expression tag	UNP Q2T109
I	-11	MET	-	expression tag	UNP Q2T109
I	-10	HIS	-	expression tag	UNP Q2T109
I	-9	HIS	-	expression tag	UNP Q2T109
I	-8	HIS	-	expression tag	UNP Q2T109
I	-7	HIS	-	expression tag	UNP Q2T109
I	-6	HIS	-	expression tag	UNP Q2T109
I	-5	HIS	-	expression tag	UNP Q2T109
I	-4	GLY	-	expression tag	UNP Q2T109
I	-3	GLY	-	expression tag	UNP Q2T109
I	-2	GLY	-	expression tag	UNP Q2T109
I	-1	GLY	-	expression tag	UNP Q2T109
I	0	GLY	-	expression tag	UNP Q2T109
J	-11	MET	-	expression tag	UNP Q2T109
J	-10	HIS	-	expression tag	UNP Q2T109
J	-9	HIS	-	expression tag	UNP Q2T109
J	-8	HIS	-	expression tag	UNP Q2T109
J	-7	HIS	-	expression tag	UNP Q2T109
J	-6	HIS	-	expression tag	UNP Q2T109
J	-5	HIS	-	expression tag	UNP Q2T109
J	-4	GLY	-	expression tag	UNP Q2T109
J	-3	GLY	-	expression tag	UNP Q2T109
J	-2	GLY	-	expression tag	UNP Q2T109
J	-1	GLY	-	expression tag	UNP Q2T109
J	0	GLY	-	expression tag	UNP Q2T109
K	-11	MET	-	expression tag	UNP Q2T109
K	-10	HIS	-	expression tag	UNP Q2T109
K	-9	HIS	-	expression tag	UNP Q2T109
K	-8	HIS	-	expression tag	UNP Q2T109
K	-7	HIS	-	expression tag	UNP Q2T109
K	-6	HIS	-	expression tag	UNP Q2T109
K	-5	HIS	-	expression tag	UNP Q2T109
K	-4	GLY	-	expression tag	UNP Q2T109
K	-3	GLY	-	expression tag	UNP Q2T109
K	-2	GLY	-	expression tag	UNP Q2T109
K	-1	GLY	-	expression tag	UNP Q2T109

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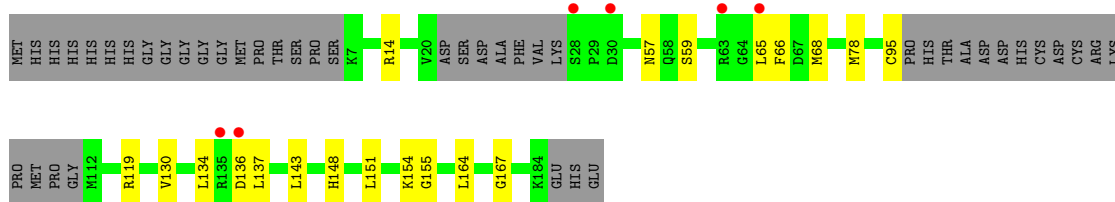| Chain	Residue	Modelled	Actual	Comment	Reference
K	0	GLY	-	expression tag	UNP Q2T109
L	-11	MET	-	expression tag	UNP Q2T109
L	-10	HIS	-	expression tag	UNP Q2T109
L	-9	HIS	-	expression tag	UNP Q2T109
L	-8	HIS	-	expression tag	UNP Q2T109
L	-7	HIS	-	expression tag	UNP Q2T109
L	-6	HIS	-	expression tag	UNP Q2T109
L	-5	HIS	-	expression tag	UNP Q2T109
L	-4	GLY	-	expression tag	UNP Q2T109
L	-3	GLY	-	expression tag	UNP Q2T109
L	-2	GLY	-	expression tag	UNP Q2T109
L	-1	GLY	-	expression tag	UNP Q2T109
L	0	GLY	-	expression tag	UNP Q2T109

- Molecule 2 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	1	Total 1	O 1	0	0
2	C	1	Total 1	O 1	0	0
2	D	2	Total 2	O 2	0	0
2	E	1	Total 1	O 1	0	0
2	H	2	Total 2	O 2	0	0
2	I	1	Total 1	O 1	0	0
2	J	1	Total 1	O 1	0	0

3 Residue-property plots ⓘ

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.
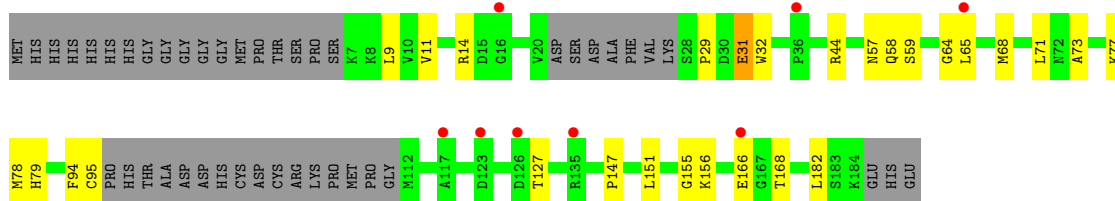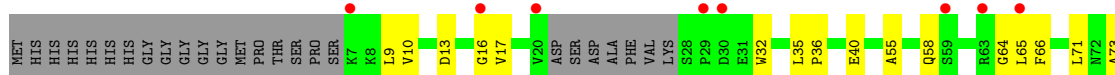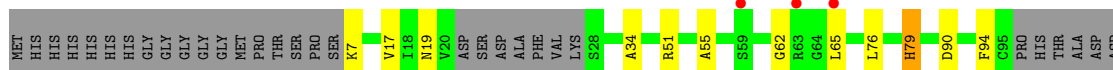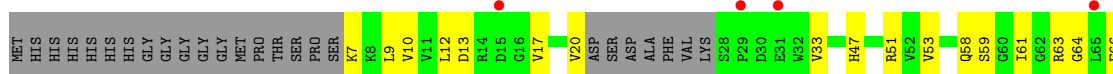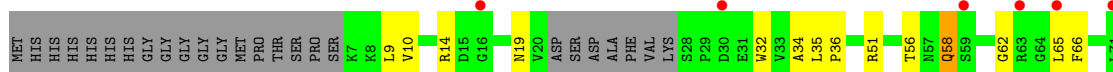
- Molecule 1: D,D-heptose 1,7-bisphosphate phosphatase

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- Molecule 1: D,D-heptose 1,7-bisphosphate phosphatase

MET HIS HIS HIS HIS HIS GLY GLY GLY GLY GLY MET PRO THR SER PRO SER K7 K8 L9 V10 R14 V20 ASP SER ASP ALA PHE VAL LYS S28 P29 D30 R44 R51 A55 T56 N57 Q58 S59 G60 I61 G62 R63 G64 L65 F66 L71 M74 H75 L76 K77

M78 F93 F94 C95 PRO THR ALA ASP HIS ASP CYS LYS PRO MET PRO GLY M112 M113 K114 E118 R119 F120 E121 I122 D123 P124 A125 P128 S133 L134 R135 D136 L137 G140 L143 G144 F145 R146 P147 L151 G155 K156 L164 D172 F181

L182 S183 K184 GLU HIS GLU

• Molecule 1: D,D-heptose 1,7-bisphosphate phosphatase

Chain E:

MET HIS HIS HIS HIS HIS GLY GLY GLY GLY GLY MET PRO THR SER PRO SER K7 R14 V20 ASP SER ASP ALA PHE VAL LYS S28 P29 D30 N57 Q58 S59 R63 G64 L65 F66 D67 M68 M78 C95 PRO HIS THR ALA ASP ASP HIS CYS ASP CYS ARG LYS

PRO MET PRO GLY M112 R119 V130 L134 R135 D136 L137 L143 H148 L151 K154 G155 L164 G167 K184 GLU HIS GLU

• Molecule 1: D,D-heptose 1,7-bisphosphate phosphatase

Chain F:

MET HIS HIS HIS HIS HIS GLY GLY GLY GLY GLY MET PRO THR SER PRO SER K7 K8 L9 G16 V20 ASP SER ASP ALA PHE VAL LYS S28 P29 D30 E31 W32 P36 E40 R44 R51 T56 N57 Q58 S59 G60 I61 G62 R63 G64 L65 V85 F93

F94 C95 PRO THR ALA ASP HIS CYS ASP CYS ARG LYS PRO MET PRO GLY M112 M113 K114 D123 D126 D132 G138 A139 G140 L143 G144 F145 K184 GLU HIS GLU

• Molecule 1: D,D-heptose 1,7-bisphosphate phosphatase

Chain G:

MET HIS HIS HIS HIS HIS GLY GLY GLY GLY GLY MET PRO THR SER PRO SER K7 K8 L9 V10 V11 R14 D15 G16 V20 ASP SER ASP ALA PHE VAL LYS S28 P29 D30 E31 W32 P36 R44 N57 Q58 S59 G64 L65 M68 L71 N72 A73 K77

M78 H79 F94 C95 PRO THR ALA ASP HIS CYS ASP CYS ARG LYS PRO MET PRO GLY M112 A117 D123 D126 T127 R135 P147 L151 G155 K156 E166 G167 T168 L182 S183 K184 GLU HIS GLU

• Molecule 1: D,D-heptose 1,7-bisphosphate phosphatase

Chain H:

MET HIS HIS HIS HIS HIS GLY GLY GLY GLY GLY MET PRO THR SER PRO SER K7 K8 L9 V10 D13 G16 V17 V20 ASP SER ASP ALA PHE VAL LYS S28 P29 D30 E31 W32 L35 P36 E40 A55 Q58 S59 R63 G64 L65 F66 L71 N72 A73

• Molecule 1: D,D-heptose 1,7-bisphosphate phosphatase

Chain I:

• Molecule 1: D,D-heptose 1,7-bisphosphate phosphatase

Chain J:

• Molecule 1: D,D-heptose 1,7-bisphosphate phosphatase

Chain K:

• Molecule 1: D,D-heptose 1,7-bisphosphate phosphatase

Chain L:

4　Data and refinement statistics　ⓘ

Property	Value	Source
Space group	P 31	Depositor
Cell constants a, b, c, α, β, γ	245.90Å　　245.90Å　　41.40Å 90.00°　　90.00°　　120.00°	Depositor
Resolution (Å)	35.01　–　2.66 35.01　–　2.66	Depositor EDS
% Data completeness (in resolution range)	87.9 (35.01-2.66) 87.9 (35.01-2.66)	Depositor EDS
R_{merge}	0.04	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.82 (at 2.65Å)	Xtriage
Refinement program	PHENIX (phenix.refine: dev_1420)	Depositor
R, R_{free}	0.214　,　0.253 0.205　,　0.226	Depositor DCC
R_{free} test set	3539 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å^2)	47.7	Xtriage
Anisotropy	0.134	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.33 , 24.5	EDS
L-test for twinning[2]	$< |L| > = 0.45, < L^2 > = 0.28$	Xtriage
Estimated twinning fraction	0.457 for -h,-k,l 0.449 for h,-h-k,-l 0.448 for -k,-h,-l	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	13977	wwPDB-VP
Average B, all atoms (Å^2)	56.0	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 28.25 % 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 1.9062e-03. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

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[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 ⓘ

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	0/1182	0.56	1/1593 (0.1%)
1	B	0.25	0/1182	0.59	1/1593 (0.1%)
1	C	0.25	0/1182	0.58	0/1593
1	D	0.29	0/1182	0.57	0/1593
1	E	0.26	0/1182	0.54	1/1593 (0.1%)
1	F	0.28	0/1182	0.58	1/1593 (0.1%)
1	G	0.28	0/1182	0.62	1/1593 (0.1%)
1	H	0.26	0/1182	0.55	1/1593 (0.1%)
1	I	0.26	0/1182	0.53	0/1593
1	J	0.27	0/1182	0.61	1/1593 (0.1%)
1	K	0.24	0/1182	0.57	1/1593 (0.1%)
1	L	0.24	0/1182	0.58	0/1593
All	All	0.26	0/14184	0.57	8/19116 (0.0%)

There are no bond length outliers.

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	G	31	GLU	N-CA-C	-5.18	97.02	111.00
1	J	61	ILE	N-CA-C	-5.17	97.06	111.00
1	E	65	LEU	CA-CB-CG	5.14	127.12	115.30
1	A	61	ILE	N-CA-C	-5.10	97.22	111.00
1	H	65	LEU	CA-CB-CG	5.08	126.98	115.30
1	K	65	LEU	CA-CB-CG	5.05	126.92	115.30
1	B	61	ILE	N-CA-C	-5.02	97.44	111.00
1	F	61	ILE	N-CA-C	-5.01	97.46	111.00

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	1164	0	1192	23	0
1	B	1164	0	1192	36	0
1	C	1164	0	1192	15	0
1	D	1164	0	1192	39	0
1	E	1164	0	1192	19	0
1	F	1164	0	1192	15	0
1	G	1164	0	1192	26	0
1	H	1164	0	1192	22	0
1	I	1164	0	1192	15	0
1	J	1164	0	1192	25	0
1	K	1164	0	1192	33	0
1	L	1164	0	1192	21	0
2	A	1	0	0	0	0
2	C	1	0	0	0	0
2	D	2	0	0	0	0
2	E	1	0	0	0	0
2	H	2	0	0	0	0
2	I	1	0	0	0	0
2	J	1	0	0	0	0
All	All	13977	0	14304	249	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 9.

All (249) 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:G:73:ALA:O	1:G:77:LYS:HG2	1.71	0.91
1:K:58:GLN:NE2	1:K:95:CYS:HB2	1.86	0.91
1:D:95:CYS:HG	1:G:95:CYS:HG	1.07	0.89
1:H:73:ALA:O	1:H:77:LYS:HG2	1.73	0.88
1:H:115:LEU:HD13	1:K:65:LEU:HD23	1.56	0.87
1:B:95:CYS:HG	1:E:95:CYS:CB	1.94	0.81
1:F:114:LYS:HG2	1:F:143:LEU:HD21	1.64	0.80
1:K:58:GLN:HE21	1:K:95:CYS:HB2	1.44	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:61:ILE:HG22	1:K:61:ILE:O	1.82	0.78
1:A:58:GLN:HE22	1:J:66:PHE:HZ	1.31	0.77
1:B:120:PHE:O	1:B:122:ILE:HG12	1.85	0.76
1:B:58:GLN:HE21	1:B:95:CYS:HB2	1.49	0.76
1:B:121:GLU:O	1:B:122:ILE:HG23	1.87	0.75
1:L:117:ALA:HB2	1:L:145:PHE:HZ	1.54	0.72
1:A:59:SER:N	1:J:95:CYS:SG	2.64	0.71
1:K:136:ASP:OD1	1:K:137:LEU:N	2.23	0.71
1:L:65:LEU:O	1:L:65:LEU:HD12	1.90	0.71
1:B:121:GLU:O	1:B:122:ILE:CG2	2.39	0.70
1:J:12:LEU:HD23	1:J:130:VAL:HB	1.74	0.70
1:A:95:CYS:HG	1:J:95:CYS:HG	1.36	0.70
1:J:7:LYS:HD3	1:J:51:ARG:HE	1.57	0.70
1:C:32:TRP:HB3	1:C:77:LYS:HG2	1.74	0.69
1:B:95:CYS:SG	1:E:95:CYS:HA	2.33	0.68
1:D:55:ALA:HB1	1:D:112:MET:CE	2.23	0.68
1:L:172:ASP:N	1:L:172:ASP:OD1	2.26	0.68
1:F:58:GLN:HE21	1:F:95:CYS:HB2	1.60	0.67
1:B:95:CYS:SG	1:E:95:CYS:CB	2.82	0.66
1:D:29:PRO:HB3	1:D:74:MET:HB2	1.80	0.64
1:B:85:VAL:HB	1:F:36:PRO:HG3	1.79	0.64
1:E:134:LEU:HD13	1:E:164:LEU:HD23	1.78	0.64
1:A:114:LYS:HA	1:A:143:LEU:HD21	1.80	0.63
1:B:67:ASP:OD1	1:E:119:ARG:NH2	2.31	0.63
1:K:178:ALA:O	1:K:182:LEU:HB2	1.99	0.63
1:B:114:LYS:HA	1:B:143:LEU:HD21	1.80	0.62
1:K:58:GLN:HB2	1:K:94:PHE:O	1.99	0.62
1:L:151:LEU:HA	1:L:155:GLY:HA3	1.81	0.61
1:K:14:ARG:NH1	1:K:15:ASP:OD1	2.33	0.61
1:D:136:ASP:OD1	1:D:137:LEU:N	2.33	0.61
1:A:151:LEU:HA	1:A:155:GLY:HA3	1.82	0.61
1:J:114:LYS:HA	1:J:143:LEU:HD21	1.84	0.60
1:E:151:LEU:HA	1:E:155:GLY:HA3	1.84	0.60
1:B:58:GLN:NE2	1:B:95:CYS:HB2	2.16	0.59
1:K:7:LYS:HE2	1:K:51:ARG:HH21	1.67	0.59
1:G:29:PRO:O	1:G:32:TRP:HB2	2.02	0.59
1:C:172:ASP:OD1	1:C:172:ASP:N	2.34	0.59
1:E:130:VAL:HG22	1:E:148:HIS:HB2	1.85	0.59
1:G:11:VAL:HG23	1:G:127:THR:HG21	1.85	0.58
1:K:14:ARG:HD3	1:K:56:THR:HG23	1.84	0.58
1:B:36:PRO:HG3	1:F:85:VAL:HB	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:58:GLN:NE2	1:L:95:CYS:HB2	2.17	0.58
1:F:114:LYS:CG	1:F:143:LEU:HD21	2.32	0.58
1:E:136:ASP:OD1	1:E:137:LEU:N	2.37	0.57
1:B:121:GLU:C	1:B:122:ILE:HG23	2.25	0.57
1:H:58:GLN:OE1	1:H:95:CYS:HB2	2.04	0.57
1:G:32:TRP:CZ2	1:G:78:MET:HG2	2.40	0.57
1:I:136:ASP:OD1	1:I:137:LEU:N	2.38	0.57
1:I:19:ASN:HA	1:I:34:ALA:HA	1.86	0.56
1:B:58:GLN:HA	1:B:61:ILE:HG13	1.87	0.56
1:D:121:GLU:OE1	1:D:121:GLU:N	2.34	0.55
1:L:117:ALA:HB2	1:L:145:PHE:CZ	2.38	0.55
1:C:126:ASP:N	1:C:126:ASP:OD1	2.40	0.55
1:L:19:ASN:HA	1:L:34:ALA:HA	1.89	0.54
1:L:9:LEU:HD23	1:L:122:ILE:HD13	1.89	0.54
1:D:121:GLU:O	1:D:121:GLU:HG2	2.08	0.54
1:G:58:GLN:HB2	1:G:94:PHE:O	2.07	0.54
1:J:13:ASP:O	1:J:17:VAL:HB	2.08	0.54
1:F:7:LYS:HD2	1:F:51:ARG:HH21	1.73	0.53
1:H:95:CYS:SG	1:K:58:GLN:HB3	2.48	0.53
1:A:14:ARG:NH2	1:A:74:MET:HE2	2.23	0.53
1:I:7:LYS:HD2	1:I:121:GLU:O	2.09	0.53
1:B:58:GLN:HE22	1:E:66:PHE:HZ	1.57	0.53
1:D:64:GLY:HA3	1:G:95:CYS:H	1.73	0.53
1:H:146:ARG:HH21	1:H:169:ARG:CZ	2.21	0.53
1:G:151:LEU:HA	1:G:155:GLY:HA3	1.91	0.52
1:K:44:ARG:NH1	1:K:179:LEU:HD23	2.23	0.52
1:B:120:PHE:O	1:B:122:ILE:CG1	2.56	0.52
1:I:55:ALA:HB1	1:I:112:MET:HE1	1.90	0.52
1:H:64:GLY:HA2	1:H:66:PHE:HE2	1.74	0.52
1:L:114:LYS:HA	1:L:143:LEU:HD21	1.91	0.52
1:B:95:CYS:CB	1:E:95:CYS:SG	2.98	0.52
1:K:117:ALA:HB2	1:K:145:PHE:HZ	1.75	0.52
1:B:120:PHE:O	1:B:121:GLU:C	2.48	0.52
1:A:95:CYS:SG	1:J:95:CYS:HA	2.49	0.52
1:B:154:LYS:HB3	1:B:157:LYS:HD3	1.91	0.52
1:D:7:LYS:HD3	1:D:51:ARG:HB2	1.91	0.51
1:H:58:GLN:HB2	1:H:94:PHE:O	2.10	0.51
1:H:146:ARG:HH21	1:H:169:ARG:NE	2.07	0.51
1:I:114:LYS:HA	1:I:143:LEU:HD21	1.92	0.51
1:D:134:LEU:HD13	1:D:164:LEU:HD23	1.93	0.51
1:D:66:PHE:HE1	1:G:58:GLN:HE22	1.59	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:95:CYS:SG	1:E:95:CYS:CA	2.98	0.50
1:D:114:LYS:HA	1:D:143:LEU:HD21	1.92	0.50
1:D:14:ARG:HD3	1:D:56:THR:HG23	1.94	0.50
1:D:71:LEU:HD13	1:G:71:LEU:HD13	1.94	0.50
1:H:40:GLU:HB2	1:L:36:PRO:HB2	1.93	0.50
1:J:130:VAL:HG22	1:J:148:HIS:HB2	1.94	0.50
1:L:62:GLY:O	1:L:65:LEU:HG	2.12	0.50
1:B:120:PHE:O	1:B:122:ILE:HG23	2.12	0.50
1:F:123:ASP:HB3	1:F:126:ASP:OD1	2.11	0.50
1:D:58:GLN:HB2	1:D:94:PHE:O	2.12	0.49
1:K:9:LEU:HD23	1:K:122:ILE:HD13	1.95	0.49
1:D:75:HIS:HA	1:D:78:MET:HE2	1.93	0.49
1:G:57:ASN:OD1	1:G:59:SER:OG	2.29	0.49
1:L:58:GLN:HB2	1:L:94:PHE:O	2.12	0.49
1:H:115:LEU:HD13	1:K:65:LEU:CD2	2.38	0.49
1:K:61:ILE:O	1:K:61:ILE:CG2	2.55	0.49
1:A:58:GLN:NE2	1:J:66:PHE:HZ	2.06	0.49
1:J:59:SER:O	1:J:63:ARG:HA	2.13	0.49
1:C:55:ALA:HB1	1:C:112:MET:HE1	1.95	0.49
1:J:138:GLN:HG2	1:J:165:PRO:HD3	1.94	0.49
1:D:55:ALA:HB1	1:D:112:MET:HE1	1.95	0.49
1:G:9:LEU:HB3	1:G:127:THR:OG1	2.13	0.49
1:B:95:CYS:CB	1:E:95:CYS:HG	2.21	0.48
1:B:134:LEU:HD13	1:B:164:LEU:HD23	1.94	0.48
1:D:7:LYS:HD2	1:D:51:ARG:NH2	2.28	0.48
1:G:44:ARG:NH1	1:G:182:LEU:HD12	2.28	0.48
1:H:95:CYS:H	1:K:64:GLY:HA3	1.78	0.48
1:L:10:VAL:HG22	1:L:128:PRO:HG2	1.94	0.48
1:L:146:ARG:HH21	1:L:169:ARG:NH1	2.11	0.48
1:J:51:ARG:HD3	1:J:90:ASP:OD1	2.13	0.48
1:D:94:PHE:HA	1:G:64:GLY:O	2.14	0.48
1:D:140:GLY:O	1:D:145:PHE:HB2	2.13	0.48
1:J:12:LEU:CD2	1:J:130:VAL:HB	2.44	0.48
1:A:167:GLY:HA3	1:K:166:GLU:HB3	1.96	0.47
1:K:19:ASN:HB3	1:K:32:TRP:CZ2	2.49	0.47
1:I:17:VAL:HG12	1:I:174:LEU:HD22	1.96	0.47
1:A:151:LEU:HD21	1:A:159:LEU:HD22	1.95	0.47
1:C:151:LEU:HA	1:C:155:GLY:HA3	1.96	0.47
1:D:128:PRO:HG3	1:D:181:PHE:CZ	2.50	0.47
1:B:95:CYS:HG	1:E:95:CYS:CA	2.28	0.47
1:K:31:GLU:O	1:K:31:GLU:HG2	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:14:ARG:HH21	1:A:32:TRP:HD1	1.63	0.47
1:B:140:GLY:O	1:B:145:PHE:HB2	2.15	0.47
1:F:113:MET:HG3	1:F:140:GLY:HA2	1.97	0.47
1:I:51:ARG:HD3	1:I:90:ASP:OD1	2.15	0.47
1:B:58:GLN:HB2	1:B:94:PHE:O	2.15	0.47
1:K:14:ARG:HE	1:K:32:TRP:HE1	1.62	0.47
1:B:40:GLU:OE1	1:B:175:ARG:NE	2.48	0.47
1:C:64:GLY:HA2	1:C:66:PHE:HE2	1.80	0.47
1:I:94:PHE:HB3	1:I:112:MET:HE3	1.97	0.47
1:I:151:LEU:HA	1:I:155:GLY:HA3	1.97	0.46
1:A:140:GLY:O	1:A:145:PHE:HB2	2.15	0.46
1:D:14:ARG:HD2	1:D:78:MET:SD	2.55	0.46
1:I:130:VAL:HG22	1:I:148:HIS:HB2	1.98	0.46
1:A:75:HIS:CG	1:J:68:MET:HG3	2.51	0.46
1:C:140:GLY:O	1:C:145:PHE:HB2	2.16	0.46
1:F:58:GLN:HA	1:F:61:ILE:HG13	1.98	0.46
1:G:32:TRP:CH2	1:G:78:MET:HG2	2.51	0.46
1:D:94:PHE:CG	1:D:112:MET:SD	3.09	0.46
1:F:40:GLU:HG2	1:F:44:ARG:HE	1.80	0.46
1:C:123:ASP:HB3	1:C:126:ASP:OD1	2.17	0.45
1:D:64:GLY:O	1:G:94:PHE:HA	2.15	0.45
1:E:167:GLY:HA3	1:G:166:GLU:HB3	1.98	0.45
1:F:56:THR:HB	1:F:93:PHE:CD1	2.52	0.45
1:H:58:GLN:HB3	1:K:95:CYS:SG	2.57	0.45
1:K:151:LEU:O	1:K:156:LYS:HG3	2.17	0.45
1:C:9:LEU:HD23	1:C:10:VAL:N	2.31	0.45
1:E:154:LYS:HE2	1:E:154:LYS:HB3	1.72	0.45
1:D:94:PHE:CB	1:D:112:MET:SD	3.04	0.45
1:B:122:ILE:O	1:B:122:ILE:HG13	2.17	0.45
1:H:9:LEU:HD13	1:H:122:ILE:HD13	1.98	0.45
1:H:151:LEU:HA	1:H:155:GLY:HA3	1.98	0.45
1:G:32:TRP:CZ2	1:G:78:MET:CG	2.99	0.45
1:H:16:GLY:O	1:H:152:THR:OG1	2.25	0.45
1:K:117:ALA:HB2	1:K:145:PHE:CZ	2.52	0.45
1:F:40:GLU:O	1:F:44:ARG:HG2	2.16	0.44
1:H:32:TRP:CZ2	1:H:78:MET:HG2	2.53	0.44
1:A:128:PRO:HG3	1:A:181:PHE:CE1	2.53	0.44
1:B:151:LEU:HA	1:B:155:GLY:HA3	1.99	0.44
1:D:119:ARG:HD2	1:G:65:LEU:HD13	1.98	0.44
1:G:147:PRO:HG2	1:G:168:THR:HA	1.99	0.44
1:H:13:ASP:O	1:H:17:VAL:HB	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:14:ARG:HD3	1:L:56:THR:HG23	2.00	0.44
1:C:41:ALA:HB2	1:C:175:ARG:HA	1.98	0.44
1:H:35:LEU:HA	1:H:36:PRO:HD3	1.87	0.44
1:A:56:THR:HB	1:A:93:PHE:CD1	2.53	0.44
1:F:9:LEU:HD12	1:F:51:ARG:HB3	2.00	0.44
1:I:76:LEU:HD12	1:I:79:HIS:HD2	1.82	0.44
1:I:113:MET:SD	1:I:116:ILE:HD12	2.58	0.44
1:K:9:LEU:HD11	1:K:53:VAL:HG23	2.00	0.44
1:K:35:LEU:HA	1:K:36:PRO:HD3	1.81	0.44
1:H:71:LEU:HD13	1:K:71:LEU:HD13	2.00	0.43
1:D:64:GLY:CA	1:G:95:CYS:H	2.30	0.43
1:D:75:HIS:CB	1:G:68:MET:HG3	2.48	0.43
1:A:58:GLN:HB2	1:A:94:PHE:O	2.19	0.43
1:L:128:PRO:HG3	1:L:181:PHE:CZ	2.53	0.43
1:H:9:LEU:HD23	1:H:10:VAL:N	2.33	0.43
1:I:62:GLY:O	1:I:65:LEU:HD23	2.19	0.43
1:K:178:ALA:O	1:K:182:LEU:HD22	2.19	0.43
1:A:44:ARG:NH1	1:A:182:LEU:HD12	2.34	0.43
1:A:114:LYS:H	1:A:114:LYS:HG3	1.40	0.43
1:J:20:VAL:HG22	1:J:33:VAL:O	2.19	0.43
1:B:66:PHE:N	1:B:66:PHE:CD2	2.87	0.43
1:D:156:LYS:HE3	1:D:156:LYS:HB3	1.83	0.43
1:J:114:LYS:H	1:J:114:LYS:HG3	1.45	0.43
1:L:19:ASN:HB3	1:L:32:TRP:CZ2	2.53	0.42
1:D:64:GLY:HA2	1:D:66:PHE:HE2	1.84	0.42
1:D:75:HIS:HB2	1:G:68:MET:HG3	2.01	0.42
1:A:68:MET:HG3	1:J:75:HIS:CG	2.55	0.42
1:A:58:GLN:HA	1:A:61:ILE:HG13	2.02	0.42
1:D:76:LEU:HD12	1:D:76:LEU:HA	1.79	0.42
1:A:19:ASN:HB3	1:A:32:TRP:CZ2	2.53	0.42
1:K:182:LEU:HA	1:K:182:LEU:HD12	1.83	0.42
1:C:44:ARG:NH1	1:C:182:LEU:HD12	2.35	0.42
1:B:128:PRO:HG3	1:B:181:PHE:CZ	2.54	0.42
1:J:64:GLY:HA2	1:J:66:PHE:HE2	1.84	0.42
1:D:151:LEU:HA	1:D:155:GLY:HA3	2.01	0.42
1:G:156:LYS:HB3	1:G:156:LYS:HE3	1.89	0.42
1:C:14:ARG:HH21	1:C:32:TRP:HE1	1.68	0.42
1:D:145:PHE:O	1:D:147:PRO:HD3	2.20	0.42
1:E:14:ARG:HD2	1:E:78:MET:SD	2.60	0.41
1:H:55:ALA:HB1	1:H:112:MET:SD	2.60	0.41
1:D:56:THR:HB	1:D:93:PHE:CD1	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:64:GLY:HA2	1:K:66:PHE:HE2	1.84	0.41
1:C:17:VAL:HG21	1:C:131:GLY:HA2	2.02	0.41
1:C:156:LYS:HB3	1:C:156:LYS:HE3	1.84	0.41
1:K:13:ASP:O	1:K:17:VAL:HB	2.21	0.41
1:L:139:ALA:O	1:L:143:LEU:HD13	2.21	0.41
1:B:121:GLU:C	1:B:122:ILE:CG2	2.88	0.41
1:D:44:ARG:NH1	1:D:182:LEU:HD12	2.35	0.41
1:F:16:GLY:HA3	1:F:132:ASP:OD2	2.20	0.41
1:J:58:GLN:HE21	1:J:71:LEU:HD21	1.85	0.41
1:D:124:PRO:O	1:D:145:PHE:HA	2.21	0.41
1:D:125:ALA:HA	1:D:144:GLY:O	2.21	0.41
1:K:117:ALA:HA	1:K:122:ILE:HD11	2.03	0.41
1:B:75:HIS:CE1	1:E:68:MET:HG3	2.56	0.41
1:I:55:ALA:HB1	1:I:112:MET:CE	2.50	0.41
1:L:9:LEU:HD12	1:L:51:ARG:O	2.20	0.41
1:A:93:PHE:HE2	1:J:68:MET:HG2	1.86	0.41
1:B:128:PRO:HG3	1:B:181:PHE:CE1	2.56	0.41
1:D:9:LEU:HD23	1:D:10:VAL:N	2.36	0.41
1:D:128:PRO:HA	1:D:146:ARG:O	2.21	0.41
1:J:9:LEU:HD23	1:J:10:VAL:N	2.36	0.41
1:J:140:GLY:C	1:J:145:PHE:HB2	2.41	0.41
1:B:120:PHE:O	1:B:122:ILE:N	2.54	0.41
1:J:53:VAL:HG22	1:J:90:ASP:HB2	2.03	0.41
1:A:44:ARG:HH12	1:A:182:LEU:HD12	1.86	0.40
1:E:57:ASN:HD21	1:E:59:SER:HB2	1.87	0.40
1:H:116:ILE:O	1:H:120:PHE:HD2	2.03	0.40
1:J:138:GLN:NE2	1:J:163:GLY:O	2.54	0.40
1:L:123:ASP:HB3	1:L:126:ASP:OD2	2.21	0.40
1:G:14:ARG:HH21	1:G:32:TRP:HE1	1.68	0.40
1:I:140:GLY:O	1:I:145:PHE:HB2	2.20	0.40
1:B:58:GLN:HB3	1:E:95:CYS:SG	2.62	0.40
1:C:29:PRO:HB3	1:C:74:MET:CE	2.52	0.40
1:K:10:VAL:HG22	1:K:128:PRO:HG2	2.03	0.40
1:F:140:GLY:O	1:F:145:PHE:HB2	2.20	0.40
1:L:76:LEU:HD12	1:L:76:LEU:HA	1.81	0.40
1:G:29:PRO:O	1:G:31:GLU:O	2.40	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	149/199 (75%)	146 (98%)	3 (2%)	0	100	100
1	B	149/199 (75%)	144 (97%)	5 (3%)	0	100	100
1	C	149/199 (75%)	145 (97%)	4 (3%)	0	100	100
1	D	149/199 (75%)	146 (98%)	3 (2%)	0	100	100
1	E	149/199 (75%)	145 (97%)	4 (3%)	0	100	100
1	F	149/199 (75%)	146 (98%)	3 (2%)	0	100	100
1	G	149/199 (75%)	146 (98%)	3 (2%)	0	100	100
1	H	149/199 (75%)	145 (97%)	4 (3%)	0	100	100
1	I	149/199 (75%)	144 (97%)	5 (3%)	0	100	100
1	J	149/199 (75%)	147 (99%)	2 (1%)	0	100	100
1	K	149/199 (75%)	147 (99%)	2 (1%)	0	100	100
1	L	149/199 (75%)	147 (99%)	2 (1%)	0	100	100
All	All	1788/2388 (75%)	1748 (98%)	40 (2%)	0	100	100

There are no Ramachandran outliers to report.

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	118/154 (77%)	115 (98%)	3 (2%)	47	66
1	B	118/154 (77%)	115 (98%)	3 (2%)	47	66

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	C	118/154 (77%)	116 (98%)	2 (2%)	60	77
1	D	118/154 (77%)	115 (98%)	3 (2%)	47	66
1	E	118/154 (77%)	117 (99%)	1 (1%)	81	89
1	F	118/154 (77%)	115 (98%)	3 (2%)	47	66
1	G	118/154 (77%)	117 (99%)	1 (1%)	81	89
1	H	118/154 (77%)	117 (99%)	1 (1%)	81	89
1	I	118/154 (77%)	117 (99%)	1 (1%)	81	89
1	J	118/154 (77%)	116 (98%)	2 (2%)	60	77
1	K	118/154 (77%)	115 (98%)	3 (2%)	47	66
1	L	118/154 (77%)	113 (96%)	5 (4%)	30	45
All	All	1416/1848 (77%)	1388 (98%)	28 (2%)	55	73

All (28) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	13	ASP
1	A	58	GLN
1	A	172	ASP
1	B	58	GLN
1	B	138	GLN
1	B	157	LYS
1	C	126	ASP
1	C	172	ASP
1	D	58	GLN
1	D	135	ARG
1	D	172	ASP
1	E	143	LEU
1	F	9	LEU
1	F	58	GLN
1	F	138	GLN
1	G	79	HIS
1	H	114	LYS
1	I	79	HIS
1	J	47	HIS
1	J	119	ARG
1	K	58	GLN
1	K	138	GLN
1	K	182	LEU

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Mol	Chain	Res	Type
1	L	35	LEU
1	L	58	GLN
1	L	66	PHE
1	L	76	LEU
1	L	172	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (7) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	58	GLN
1	B	58	GLN
1	D	58	GLN
1	E	58	GLN
1	F	58	GLN
1	K	58	GLN
1	L	58	GLN

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 ⓘ

There are no ligands in this entry.

5.7 Other polymers ⓘ

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, 95th 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	155/199 (77%)	0.24	7 (4%)	33	30	20, 44, 103, 118	0
1	B	155/199 (77%)	0.37	8 (5%)	27	24	23, 52, 112, 130	0
1	C	155/199 (77%)	0.36	6 (3%)	39	35	22, 55, 108, 125	0
1	D	155/199 (77%)	0.46	10 (6%)	18	16	24, 54, 113, 132	0
1	E	155/199 (77%)	0.31	6 (3%)	39	35	23, 50, 102, 129	0
1	F	155/199 (77%)	0.48	10 (6%)	18	16	24, 52, 112, 127	0
1	G	155/199 (77%)	0.30	8 (5%)	27	24	23, 50, 104, 124	0
1	H	155/199 (77%)	0.38	11 (7%)	16	12	22, 47, 101, 123	0
1	I	155/199 (77%)	0.36	5 (3%)	47	44	24, 48, 106, 125	0
1	J	155/199 (77%)	0.29	6 (3%)	39	35	21, 45, 106, 126	0
1	K	155/199 (77%)	0.43	9 (5%)	23	19	26, 49, 106, 124	0
1	L	155/199 (77%)	0.33	12 (7%)	13	10	18, 47, 107, 127	0
All	All	1860/2388 (77%)	0.36	98 (5%)	26	23	18, 50, 108, 132	0

All (98) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	K	28	SER	8.9
1	E	30	ASP	7.6
1	C	65	LEU	6.7
1	B	65	LEU	6.6
1	F	63	ARG	5.8
1	I	63	ARG	5.6
1	J	184	LYS	5.6
1	G	16	GLY	5.3
1	K	30	ASP	5.3
1	H	184	LYS	5.2
1	B	47	HIS	5.1

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Mol	Chain	Res	Type	RSRZ
1	D	65	LEU	5.0
1	L	63	ARG	4.9
1	K	65	LEU	4.9
1	E	28	SER	4.9
1	D	122	ILE	4.5
1	A	65	LEU	4.5
1	F	30	ASP	4.4
1	I	65	LEU	4.4
1	B	30	ASP	4.2
1	D	63	ARG	4.2
1	K	61	ILE	4.1
1	H	63	ARG	3.9
1	K	20	VAL	3.8
1	H	20	VAL	3.8
1	F	31	GLU	3.8
1	G	123	ASP	3.8
1	L	16	GLY	3.6
1	L	121	GLU	3.6
1	E	65	LEU	3.6
1	L	166	GLU	3.4
1	H	65	LEU	3.4
1	H	30	ASP	3.4
1	J	15	ASP	3.3
1	H	59	SER	3.3
1	A	30	ASP	3.3
1	D	133	SER	3.2
1	A	118	GLU	3.2
1	C	20	VAL	3.2
1	F	65	LEU	3.1
1	L	117	ALA	3.1
1	J	31	GLU	3.1
1	I	164	LEU	3.0
1	D	61	ILE	3.0
1	D	30	ASP	2.9
1	K	63	ARG	2.9
1	E	63	ARG	2.9
1	A	163	GLY	2.8
1	J	65	LEU	2.8
1	H	29	PRO	2.8
1	J	74	MET	2.8
1	C	133	SER	2.7
1	I	59	SER	2.7

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Mol	Chain	Res	Type	RSRZ
1	D	20	VAL	2.7
1	I	122	ILE	2.7
1	K	31	GLU	2.7
1	F	126	ASP	2.7
1	L	30	ASP	2.7
1	L	65	LEU	2.6
1	A	61	ILE	2.6
1	B	60	GLY	2.6
1	H	7	LYS	2.6
1	G	126	ASP	2.6
1	J	29	PRO	2.6
1	F	32	TRP	2.5
1	L	123	ASP	2.5
1	K	59	SER	2.5
1	L	127	THR	2.5
1	B	20	VAL	2.5
1	C	63	ARG	2.5
1	B	121	GLU	2.5
1	A	15	ASP	2.5
1	E	136	ASP	2.4
1	D	59	SER	2.4
1	F	64	GLY	2.4
1	B	116	ILE	2.3
1	F	28	SER	2.3
1	C	30	ASP	2.3
1	G	117	ALA	2.3
1	L	59	SER	2.3
1	F	60	GLY	2.3
1	G	36	PRO	2.2
1	B	123	ASP	2.2
1	H	138	GLN	2.2
1	L	118	GLU	2.2
1	E	135	ARG	2.2
1	G	65	LEU	2.2
1	K	136	ASP	2.2
1	G	135	ARG	2.2
1	A	156	LYS	2.1
1	H	16	GLY	2.1
1	D	119	ARG	2.1
1	C	16	GLY	2.1
1	G	166	GLU	2.1
1	L	71	LEU	2.1

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Mol	Chain	Res	Type	RSRZ
1	F	20	VAL	2.0
1	H	122	ILE	2.0
1	D	118	GLU	2.0

6.2 Non-standard residues in protein, DNA, RNA chains ⓘ

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

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

There are no ligands in this entry.

6.5 Other polymers ⓘ

There are no such residues in this entry.