Full wwPDB X-ray Structure Validation Report ⓘ

Feb 5, 2025 – 12:10 PM JST

PDB ID	:	8YP1
Title	:	Crystal structure of HARS WHEP domain fused with Fc
Authors	:	Geng, Y.; Zhai, L.
Deposited on	:	2024-03-15
Resolution	:	2.79 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:

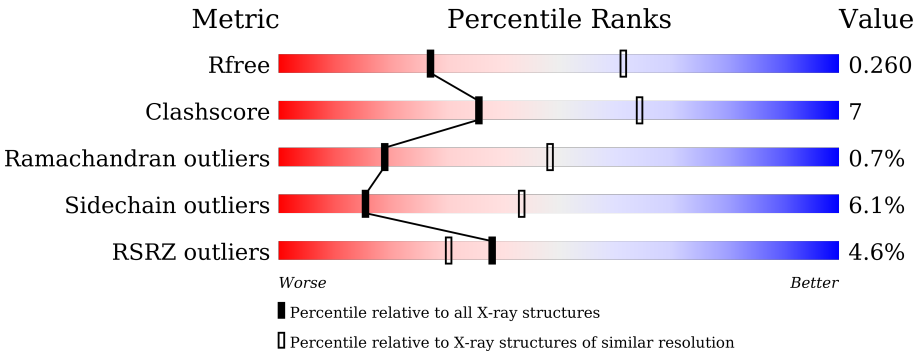
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.21
EDS	:	3.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.004 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.40

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 2.79 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}	164625	3657 (2.80-2.80)
Clashscore	180529	4123 (2.80-2.80)
Ramachandran outliers	177936	4071 (2.80-2.80)
Sidechain outliers	177891	4073 (2.80-2.80)
RSRZ outliers	164620	3659 (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 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	287	4% 74% 11% • 13%
1	B	287	3% 76% 10% • 11%
1	C	287	6% 72% 11% • 16%
1	D	287	3% 76% 10% • 11%

2 Entry composition (i)

There is only 1 type of molecule in this entry. The entry contains 7973 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 Immunoglobulin heavy constant gamma 1,Histidine–tRNA ligase, cytoplasmic.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	250	Total	C	N	O	S	0	0	0
			1992	1265	342	379	6			
1	B	255	Total	C	N	O	S	0	0	0
			2029	1289	347	387	6			
1	C	242	Total	C	N	O	S	0	0	0
			1923	1224	324	369	6			
1	D	255	Total	C	N	O	S	0	0	0
			2029	1289	347	387	6			

There are 12 discrepancies between the modelled and reference sequences:

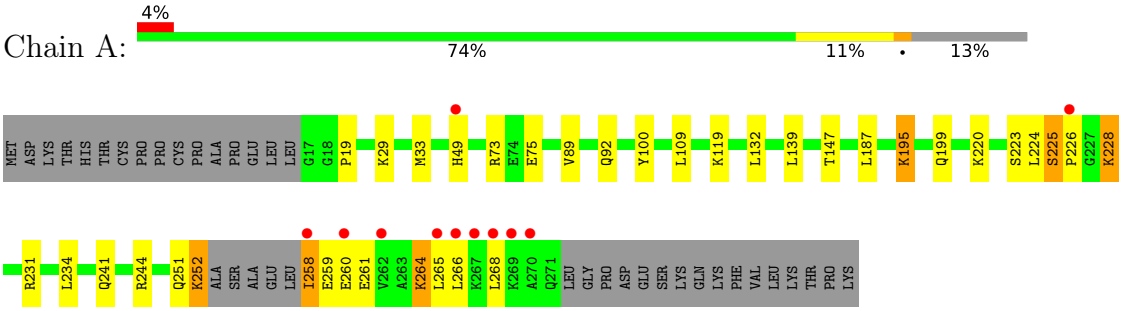
Chain	Residue	Modelled	Actual	Comment	Reference
A	1	MET	-	initiating methionine	UNP P01857
A	227	GLY	-	linker	UNP P01857
A	228	LYS	-	linker	UNP P01857
B	1	MET	-	initiating methionine	UNP P01857
B	227	GLY	-	linker	UNP P01857
B	228	LYS	-	linker	UNP P01857
C	1	MET	-	initiating methionine	UNP P01857
C	227	GLY	-	linker	UNP P01857
C	228	LYS	-	linker	UNP P01857
D	1	MET	-	initiating methionine	UNP P01857
D	227	GLY	-	linker	UNP P01857
D	228	LYS	-	linker	UNP P01857

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.

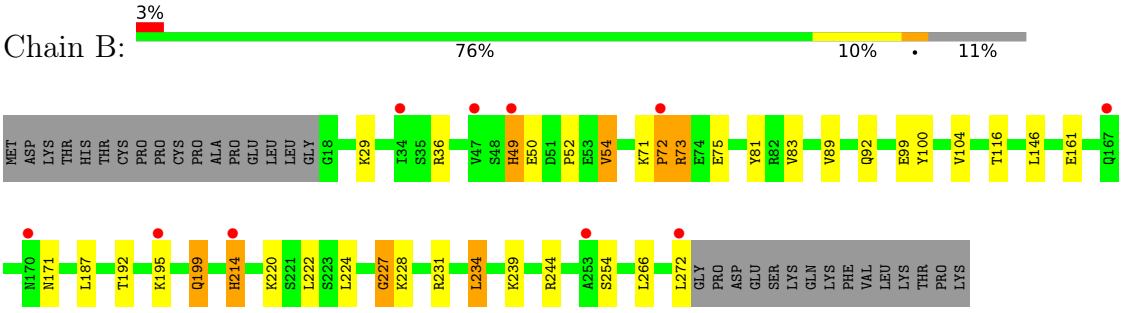
• Molecule 1: Immunoglobulin heavy constant gamma 1,Histidine–tRNA ligase, cytoplasmic

Chain A:



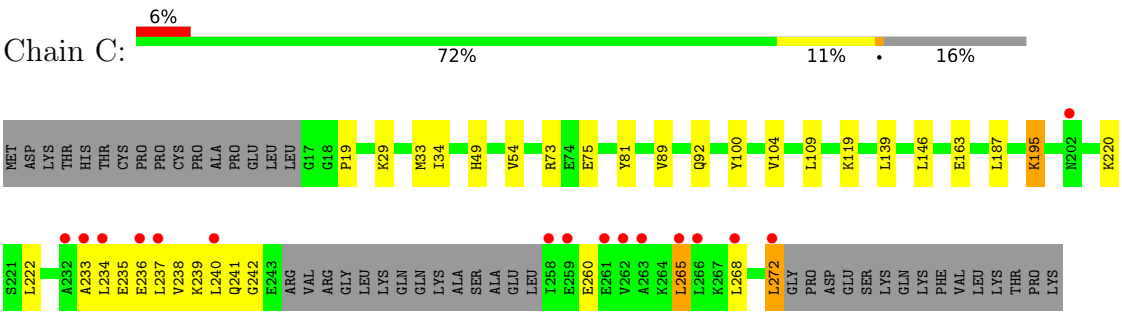
• Molecule 1: Immunoglobulin heavy constant gamma 1,Histidine–tRNA ligase, cytoplasmic

Chain B:



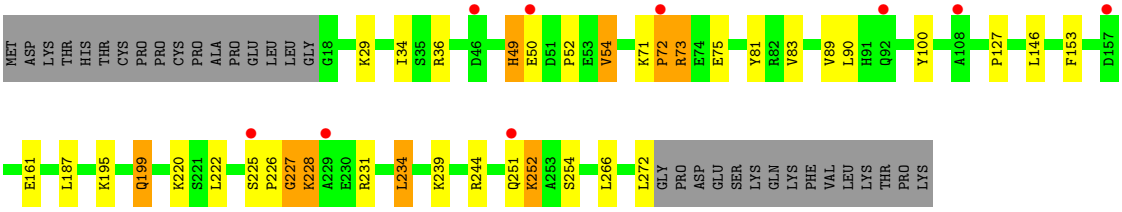
• Molecule 1: Immunoglobulin heavy constant gamma 1,Histidine–tRNA ligase, cytoplasmic

Chain C:



• Molecule 1: Immunoglobulin heavy constant gamma 1,Histidine–tRNA ligase, cytoplasmic

Chain D:


MET ASP LYS THR HIS THR CYS PRO PRO CYS PRO ALA PRO GLU LEU LEU GLY G18 K29 I34 S35 R36 D46 H49 E50 D51 P52 E53 V54 K71 P72 R73 E74 E75 Y81 R82 V83 V89 L90 H91 Q92 Y100 A108 P127 L146 F153 D157
E161 L187 K195 Q199 K220 S221 L222 S225 P226 G227 K228 A229 E230 R231 L234 K239 R244 Q251 K252 A253 S254 L266 L272 GLY PRO ASP GLU SER LYS GLN LYS PHE VAL LEU LYS THR PRO LYS

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	59.94Å 112.98Å 110.21Å 90.00° 90.37° 90.00°	Depositor
Resolution (Å)	49.58 – 2.79 49.58 – 2.79	Depositor EDS
% Data completeness (in resolution range)	97.3 (49.58-2.79) 97.4 (49.58-2.79)	Depositor EDS
R_{merge}	0.17	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.82 (at 2.81Å)	Xtriage
Refinement program	REFMAC 5.8.0253	Depositor
R, R_{free}	0.217 , 0.256 0.220 , 0.260	Depositor DCC
R_{free} test set	1757 reflections (4.80%)	wwPDB-VP
Wilson B-factor (Å^2)	60.6	Xtriage
Anisotropy	0.567	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.35 , 53.1	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.32$	Xtriage
Estimated twinning fraction	0.019 for -h,-l,-k 0.008 for -h,l,k 0.043 for h,-k,-l	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	7973	wwPDB-VP
Average B, all atoms (Å^2)	73.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.61% 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

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	0.65	0/2038	0.82	0/2763
1	B	0.65	0/2076	0.83	0/2817
1	C	0.66	0/1969	0.81	0/2674
1	D	0.65	0/2076	0.79	0/2817
All	All	0.65	0/8159	0.81	0/11071

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	1992	0	1993	52	1
1	B	2029	0	2034	20	0
1	C	1923	0	1913	25	0
1	D	2029	0	2034	20	0
All	All	7973	0	7974	115	1

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 7.

All (115) 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:225:SER:N	1:A:228:LYS:NZ	1.93	1.15
1:C:233:ALA:HA	1:C:236:GLU:CD	1.57	1.05
1:A:224:LEU:C	1:A:228:LYS:HZ1	1.64	1.00
1:A:224:LEU:CA	1:A:228:LYS:NZ	2.26	0.99
1:A:225:SER:N	1:A:228:LYS:HZ2	1.53	0.97
1:C:233:ALA:CA	1:C:236:GLU:CD	2.18	0.97
1:A:224:LEU:C	1:A:228:LYS:NZ	2.17	0.96
1:A:225:SER:CB	1:A:228:LYS:HE3	1.96	0.95
1:A:225:SER:H	1:A:228:LYS:HZ2	1.04	0.93
1:C:235:GLU:HG2	1:C:272:LEU:HD11	1.55	0.88
1:A:225:SER:O	1:A:228:LYS:HD2	1.74	0.88
1:C:139:LEU:O	1:C:195:LYS:HE3	1.75	0.86
1:C:235:GLU:CG	1:C:272:LEU:HD11	2.06	0.85
1:A:252:LYS:HB2	1:A:258:ILE:HG23	1.61	0.83
1:A:225:SER:OG	1:A:228:LYS:HE3	1.79	0.83
1:A:224:LEU:N	1:A:228:LYS:NZ	2.30	0.80
1:A:224:LEU:HB3	1:A:228:LYS:NZ	1.98	0.78
1:A:139:LEU:O	1:A:195:LYS:HE3	1.84	0.77
1:A:225:SER:N	1:A:228:LYS:CE	2.47	0.77
1:C:242:GLY:HA2	1:C:265:LEU:HD11	1.66	0.77
1:A:252:LYS:NZ	1:A:261:GLU:OE1	2.19	0.75
1:A:265:LEU:HD13	1:A:268:LEU:HD12	1.67	0.75
1:A:224:LEU:CA	1:A:228:LYS:HZ1	1.92	0.74
1:A:224:LEU:CB	1:A:228:LYS:NZ	2.51	0.74
1:A:224:LEU:CB	1:A:228:LYS:HZ1	2.02	0.73
1:A:225:SER:H	1:A:228:LYS:NZ	1.69	0.71
1:C:235:GLU:HG2	1:C:272:LEU:CD1	2.22	0.70
1:D:195:LYS:HD2	1:D:199:GLN:HE22	1.57	0.69
1:C:29:LYS:HG2	1:C:33:MET:CE	2.24	0.67
1:A:224:LEU:N	1:A:228:LYS:HZ2	1.91	0.67
1:A:29:LYS:HG2	1:A:33:MET:CE	2.25	0.66
1:C:139:LEU:O	1:C:195:LYS:CE	2.43	0.66
1:A:241:GLN:OE1	1:A:265:LEU:HD12	1.98	0.64
1:A:224:LEU:HB3	1:A:228:LYS:HZ3	1.62	0.64
1:A:139:LEU:O	1:A:195:LYS:CE	2.46	0.63
1:B:195:LYS:HD2	1:B:199:GLN:HE22	1.64	0.63
1:C:49:HIS:NE2	1:C:75:GLU:OE1	2.33	0.61
1:A:49:HIS:NE2	1:A:75:GLU:OE1	2.33	0.61
1:B:214:HIS:NE2	1:D:90:LEU:HD22	2.15	0.61
1:A:225:SER:HB2	1:A:228:LYS:HE3	1.83	0.60
1:A:29:LYS:HG2	1:A:33:MET:HE1	1.83	0.59
1:A:224:LEU:CA	1:A:228:LYS:HZ2	2.14	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:264:LYS:HG2	1:A:265:LEU:HD22	1.86	0.57
1:D:54:VAL:HG11	1:D:83:VAL:HG21	1.87	0.57
1:D:227:GLY:O	1:D:231:ARG:HG3	2.05	0.57
1:B:71:LYS:HB3	1:B:72:PRO:CD	2.35	0.56
1:A:244:ARG:HD3	1:A:265:LEU:HD11	1.88	0.55
1:A:225:SER:O	1:A:228:LYS:CD	2.53	0.54
1:C:29:LYS:HG2	1:C:33:MET:HE1	1.89	0.53
1:C:235:GLU:HG3	1:C:272:LEU:HD11	1.86	0.53
1:D:71:LYS:HB3	1:D:72:PRO:CD	2.38	0.53
1:C:187:LEU:HD12	1:C:187:LEU:C	2.29	0.53
1:A:187:LEU:C	1:A:187:LEU:HD12	2.29	0.52
1:B:187:LEU:HD12	1:B:187:LEU:C	2.29	0.52
1:A:224:LEU:C	1:A:228:LYS:HZ2	1.98	0.52
1:C:29:LYS:CG	1:C:33:MET:HE1	2.41	0.51
1:D:187:LEU:C	1:D:187:LEU:HD12	2.31	0.51
1:A:29:LYS:CG	1:A:33:MET:HE1	2.40	0.51
1:A:224:LEU:HB3	1:A:228:LYS:HZ1	1.65	0.51
1:C:238:VAL:HG22	1:C:268:LEU:HB3	1.94	0.50
1:B:171:ASN:ND2	1:B:192:THR:HB	2.27	0.50
1:C:241:GLN:HG3	1:C:268:LEU:CD1	2.42	0.49
1:A:225:SER:CA	1:A:228:LYS:HE3	2.42	0.49
1:D:234:LEU:HB3	1:D:272:LEU:HD21	1.95	0.49
1:A:92:GLN:H	1:A:92:GLN:CD	2.16	0.48
1:C:92:GLN:H	1:C:92:GLN:CD	2.17	0.48
1:A:225:SER:H	1:A:228:LYS:HD2	1.78	0.48
1:B:52:PRO:O	1:B:73:ARG:NH2	2.47	0.48
1:B:146:LEU:HD13	1:B:222:LEU:HD23	1.94	0.48
1:A:225:SER:H	1:A:228:LYS:CE	2.19	0.47
1:B:54:VAL:HG11	1:B:83:VAL:HG21	1.96	0.47
1:A:258:ILE:HB	1:A:259:GLU:H	1.67	0.47
1:D:52:PRO:O	1:D:73:ARG:NH2	2.47	0.47
1:C:49:HIS:HD2	1:C:81:TYR:CE2	2.33	0.46
1:D:225:SER:HB2	1:D:226:PRO:HD2	1.96	0.46
1:A:19:PRO:HD2	1:A:109:LEU:HD21	1.98	0.46
1:A:224:LEU:N	1:A:228:LYS:HZ3	2.11	0.46
1:D:89:VAL:HG12	1:D:100:TYR:CE2	2.51	0.46
1:B:49:HIS:HB3	1:B:81:TYR:CE2	2.51	0.45
1:B:214:HIS:CD2	1:D:90:LEU:HD22	2.52	0.45
1:C:29:LYS:HG2	1:C:33:MET:HE3	1.99	0.45
1:A:89:VAL:HG12	1:A:100:TYR:CE2	2.52	0.44
1:B:227:GLY:O	1:B:231:ARG:HG3	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:251:GLN:HG2	1:D:252:LYS:H	1.82	0.44
1:B:234:LEU:HD13	1:B:234:LEU:HA	1.91	0.44
1:D:228:LYS:H	1:D:228:LYS:HE2	1.82	0.44
1:C:89:VAL:HG12	1:C:100:TYR:CE2	2.53	0.44
1:D:29:LYS:HD3	1:D:36:ARG:NH1	2.33	0.44
1:C:19:PRO:HD2	1:C:109:LEU:HD21	1.99	0.43
1:A:225:SER:HG	1:A:228:LYS:HE3	1.81	0.43
1:B:29:LYS:HD3	1:B:36:ARG:NH1	2.33	0.43
1:D:146:LEU:HD13	1:D:222:LEU:HD23	2.00	0.43
1:B:99:GLU:OE2	1:B:116:THR:HG21	2.18	0.43
1:B:224:LEU:HD12	1:B:224:LEU:HA	1.87	0.43
1:B:89:VAL:HG12	1:B:100:TYR:CE2	2.54	0.43
1:D:239:LYS:HB2	1:D:239:LYS:HE2	1.83	0.43
1:A:223:SER:OG	1:A:228:LYS:CD	2.68	0.42
1:D:49:HIS:HB3	1:D:81:TYR:CE2	2.55	0.42
1:A:195:LYS:HD3	1:A:199:GLN:NE2	2.34	0.42
1:C:146:LEU:HD13	1:C:222:LEU:HD23	2.02	0.42
1:D:228:LYS:HE2	1:D:228:LYS:N	2.35	0.42
1:A:224:LEU:O	1:A:224:LEU:HG	2.19	0.42
1:C:241:GLN:HG3	1:C:268:LEU:HD12	2.01	0.41
1:A:261:GLU:HA	1:A:264:LYS:HD2	2.02	0.41
1:A:244:ARG:HD3	1:A:265:LEU:CD1	2.50	0.41
1:C:54:VAL:HG13	1:C:104:VAL:HG13	2.02	0.41
1:A:225:SER:H	1:A:228:LYS:CD	2.34	0.41
1:B:71:LYS:HB3	1:B:72:PRO:HD2	2.03	0.41
1:A:132:LEU:HB2	1:A:147:THR:HB	2.03	0.41
1:D:127:PRO:HB3	1:D:153:PHE:HB3	2.02	0.41
1:B:234:LEU:HB3	1:B:272:LEU:HD21	2.04	0.40
1:B:52:PRO:HB2	1:B:73:ARG:NH1	2.36	0.40
1:B:54:VAL:HG23	1:B:104:VAL:HG13	2.03	0.40
1:D:49:HIS:HA	1:D:52:PRO:HB3	2.04	0.40
1:C:233:ALA:O	1:C:237:LEU:HG	2.21	0.40

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

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:49:HIS:O	1:A:258:ILE:CD1[2_656]	2.08	0.12

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	246/287 (86%)	242 (98%)	3 (1%)	1 (0%)	30 61
1	B	253/287 (88%)	246 (97%)	4 (2%)	3 (1%)	11 34
1	C	238/287 (83%)	235 (99%)	3 (1%)	0	100 100
1	D	253/287 (88%)	247 (98%)	3 (1%)	3 (1%)	11 34
All	All	990/1148 (86%)	970 (98%)	13 (1%)	7 (1%)	19 48

All (7) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	73	ARG
1	D	73	ARG
1	A	226	PRO
1	D	227	GLY
1	B	72	PRO
1	D	72	PRO
1	B	227	GLY

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	227/260 (87%)	213 (94%)	14 (6%)	15 43
1	B	231/260 (89%)	216 (94%)	15 (6%)	14 40
1	C	220/260 (85%)	208 (94%)	12 (6%)	18 47

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	D	231/260 (89%)	217 (94%)	14 (6%)	15 43
All	All	909/1040 (87%)	854 (94%)	55 (6%)	15 43

All (55) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	73	ARG
1	A	119	LYS
1	A	195	LYS
1	A	220	LYS
1	A	225	SER
1	A	228	LYS
1	A	231	ARG
1	A	234	LEU
1	A	251	GLN
1	A	252	LYS
1	A	258	ILE
1	A	260	GLU
1	A	264	LYS
1	A	266	LEU
1	B	49	HIS
1	B	50	GLU
1	B	54	VAL
1	B	75	GLU
1	B	92	GLN
1	B	161	GLU
1	B	199	GLN
1	B	214	HIS
1	B	220	LYS
1	B	228	LYS
1	B	234	LEU
1	B	239	LYS
1	B	244	ARG
1	B	254	SER
1	B	266	LEU
1	C	34	ILE
1	C	73	ARG
1	C	119	LYS
1	C	163	GLU
1	C	195	LYS
1	C	220	LYS
1	C	234	LEU

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Mol	Chain	Res	Type
1	C	239	LYS
1	C	240	LEU
1	C	260	GLU
1	C	265	LEU
1	C	272	LEU
1	D	34	ILE
1	D	49	HIS
1	D	50	GLU
1	D	54	VAL
1	D	75	GLU
1	D	161	GLU
1	D	199	GLN
1	D	220	LYS
1	D	228	LYS
1	D	234	LEU
1	D	244	ARG
1	D	252	LYS
1	D	254	SER
1	D	266	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (14) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	91	HIS
1	A	219	GLN
1	B	66	HIS
1	B	199	GLN
1	B	202	ASN
1	B	216	HIS
1	B	219	GLN
1	B	250	GLN
1	C	91	HIS
1	C	219	GLN
1	D	199	GLN
1	D	216	HIS
1	D	219	GLN
1	D	250	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 oligosaccharides 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

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	250/287 (87%)	0.13	11 (4%)	39	32	26, 59, 119, 150	0
1	B	255/287 (88%)	0.41	10 (3%)	44	36	31, 68, 110, 151	0
1	C	242/287 (84%)	0.38	16 (6%)	26	19	35, 67, 143, 193	0
1	D	255/287 (88%)	0.51	9 (3%)	47	39	43, 77, 120, 140	0
All	All	1002/1148 (87%)	0.36	46 (4%)	38	30	26, 69, 124, 193	0

All (46) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	258	ILE	5.5
1	A	258	ILE	4.6
1	C	262	VAL	4.0
1	C	237	LEU	3.8
1	A	260	GLU	3.6
1	C	233	ALA	3.4
1	C	234	LEU	3.3
1	C	232	ALA	3.2
1	C	268	LEU	3.2
1	A	268	LEU	3.2
1	C	266	LEU	3.1
1	B	214	HIS	3.0
1	C	202	ASN	2.9
1	D	229	ALA	2.8
1	C	265	LEU	2.8
1	B	170	ASN	2.7
1	B	47	VAL	2.6
1	D	108	ALA	2.6
1	B	49	HIS	2.6
1	A	226	PRO	2.6
1	C	240	LEU	2.5

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Mol	Chain	Res	Type	RSRZ
1	C	263	ALA	2.5
1	C	261	GLU	2.5
1	C	272	LEU	2.5
1	D	92	GLN	2.5
1	D	46	ASP	2.4
1	C	236	GLU	2.4
1	D	157	ASP	2.4
1	A	265	LEU	2.3
1	B	253	ALA	2.3
1	B	72	PRO	2.3
1	D	72	PRO	2.3
1	D	225	SER	2.3
1	A	266	LEU	2.3
1	A	262	VAL	2.3
1	A	267	LYS	2.2
1	B	167	GLN	2.2
1	D	251	GLN	2.2
1	A	270	ALA	2.2
1	A	269	LYS	2.1
1	C	259	GLU	2.1
1	B	195	LYS	2.1
1	B	34	ILE	2.1
1	D	50	GLU	2.1
1	A	49	HIS	2.1
1	B	272	LEU	2.1

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)

There are no ligands in this entry.

6.5 Other polymers (i)

There are no such residues in this entry.