W O R L D W I D E
wwPDB
P R O T E I N   D A T A   B A N K

Full wwPDB X-ray Structure Validation Report (i)

Jul 23, 2024 – 06:11 PM JST

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PDB ID	:	8IPF
Title	:	Crystal structure of an ankyrin protein that can specifically recognize a parallel G-quadruplex
Authors	:	Ngo, K.H.; Liew, C.W.; Heddi, B.; Phan, A.T.
Deposited on	:	2023-03-14
Resolution	:	2.01 Å(reported)

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 2.01 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			0.248
Clashscore			6
Ramachandran outliers			0.2%
Sidechain outliers			4.0%
RSRZ outliers			0.6%

Worse   *Better*

▮ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution
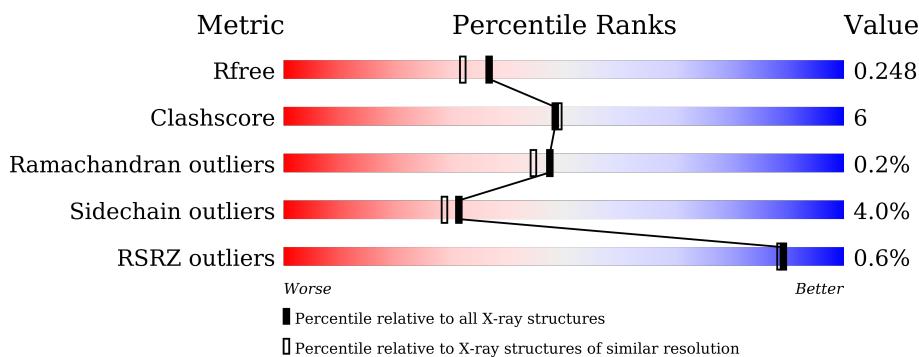
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	8085 (2.00-2.00)
Clashscore	141614	9178 (2.00-2.00)
Ramachandran outliers	138981	9054 (2.00-2.00)
Sidechain outliers	138945	9053 (2.00-2.00)
RSRZ outliers	127900	7900 (2.00-2.00)

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	136	77% 10% • 10%
1	B	136	74% 15% • 11%
1	C	136	77% 11% • 11%
1	D	136	72% 17% 11%
1	E	136	75% 13% • 11%
1	F	136	78% 9% • 11%

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Mol	Chain	Length	Quality of chain
1	G	136	% 72% 16% · 11%
1	H	136	79% 10% 11%

2 Entry composition ⓘ

There are 2 unique types of molecules in this entry. The entry contains 7918 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 DARPin (2E4).

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	122	Total	C	N	O	S	0	0	0
			936	585	168	180	3			
1	B	121	Total	C	N	O	S	0	1	0
			934	584	168	179	3			
1	C	121	Total	C	N	O	S	0	2	0
			943	588	171	181	3			
1	D	121	Total	C	N	O	S	0	1	0
			930	581	166	180	3			
1	E	121	Total	C	N	O	S	0	0	0
			927	579	166	179	3			
1	F	121	Total	C	N	O	S	0	1	0
			938	585	170	180	3			
1	G	121	Total	C	N	O	S	0	4	0
			953	598	172	179	4			
1	H	121	Total	C	N	O	S	0	1	0
			934	584	168	179	3			

- Molecule 2 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	58	Total	O	0	0
			58	58		
2	B	54	Total	O	0	0
			54	54		
2	C	53	Total	O	0	0
			53	53		
2	D	59	Total	O	0	0
			59	59		
2	E	53	Total	O	0	0
			53	53		
2	F	62	Total	O	0	0
			62	62		

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	G	37	Total 37	O 37	0	0
2	H	47	Total 47	O 47	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: DARPin (2E4)
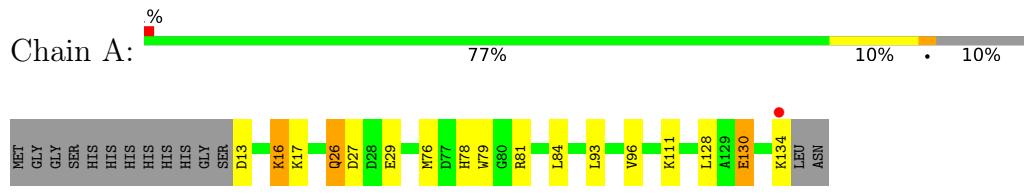
Chain A:

- Molecule 1: DARPin (2E4)

Chain B:

- Molecule 1: DARPin (2E4)

Chain C:
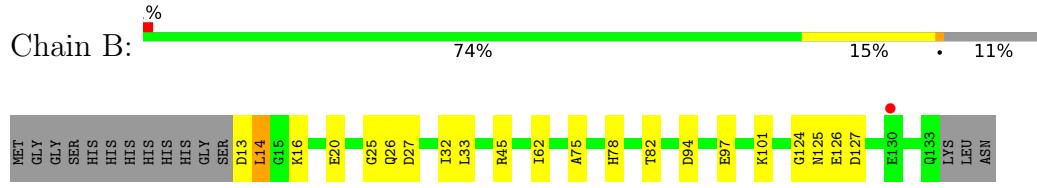
- Molecule 1: DARPin (2E4)
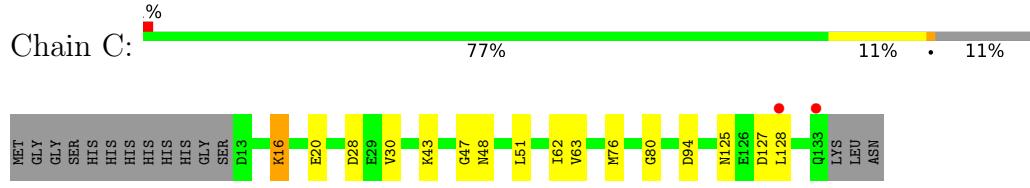
Chain D:

- Molecule 1: DARPin (2E4)
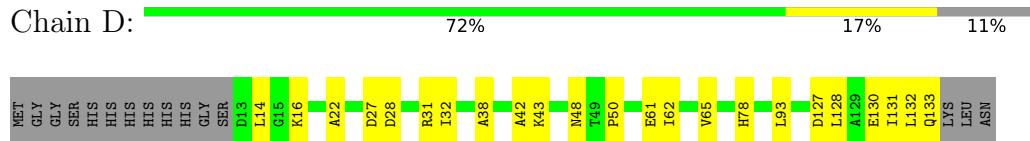
Chain E:

- Molecule 1: DARPin (2E4)

Chain F:

78%　　　　　　　　　　　　　　　　　　　　　　9%　　　·　　11%

MET GLY GLY SER HIS HIS HIS HIS HIS GLY SER D13 K16 A21 Q26 E29 K43 D44 R45 Y56 M57 A75 T82 A88 L93 V96 D127 L128 Q133 LYS LEU ASN

• Molecule 1: DARPin (2E4)

%

Chain G:

72%　　　　　　　　　　　　　　16%　　　·　　11%

MET GLY GLY SER HIS HIS HIS HIS HIS GLY SER D13 A22 D27 R31 A42 K43 D44 N48 T49 P50 H59 V65 K68 Y69 H78 W79 H85 L93 D94 I119 S120 N125 E126 D127 E130 Q133 LYS LEU ASN
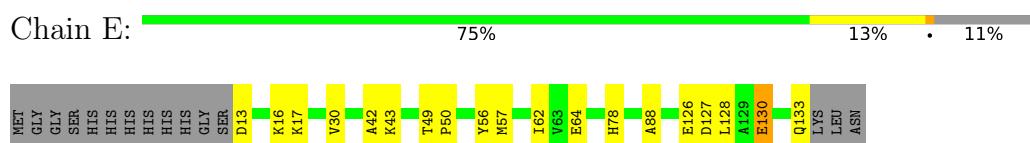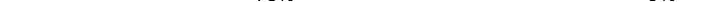
• Molecule 1: DARPin (2E4)

Chain H:

79%　　　　　　　　　　　　　　　　　　　　　10%　　　11%

MET GLY GLY SER HIS HIS HIS HIS HIS GLY SER D13 M57 Y69 L84 A88 L93 D94 I96 V96 L100 K101 A104 D127 L128 A129 E130 I131 L132 Q133 LYS LEU ASN

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	64.30Å　59.07Å　127.50Å 90.00°　100.56°　90.00°	Depositor
Resolution (Å)	49.25 – 2.01 49.25 – 2.01	Depositor EDS
% Data completeness (in resolution range)	99.1 (49.25-2.01) 99.1 (49.25-2.01)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.62 (at 2.01Å)	Xtriage
Refinement program	PHENIX 1.19.2_4158	Depositor
R, R_{free}	0.226 , 0.249 0.226 , 0.248	Depositor DCC
R_{free} test set	3105 reflections (4.97%)	wwPDB-VP
Wilson B-factor (Å^2)	29.0	Xtriage
Anisotropy	1.191	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.36 , 53.6	EDS
L-test for twinning[2]	$< |L| > = 0.55$, $< L^2 > = 0.39$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	7918	wwPDB-VP
Average B, all atoms (Å^2)	43.0	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 50.40 % 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 6.5006e-05. 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	0.53	0/950	0.64	0/1283
1	B	0.51	0/952	0.64	0/1287
1	C	0.57	0/960	0.71	0/1297
1	D	0.58	0/947	0.70	0/1280
1	E	0.54	0/941	0.68	0/1272
1	F	0.48	0/952	0.58	0/1286
1	G	0.64	0/980	0.81	0/1322
1	H	0.49	0/952	0.62	0/1287
All	All	0.55	0/7634	0.68	0/10314

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	2

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	F	45[A]	ARG	Mainchain
1	F	45[B]	ARG	Mainchain

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	936	0	924	12	1
1	B	934	0	918	10	0
1	C	943	0	929	13	0
1	D	930	0	916	13	0
1	E	927	0	911	11	0
1	F	938	0	923	13	0
1	G	953	0	953	14	0
1	H	934	0	918	5	1
2	A	58	0	0	4	0
2	B	54	0	0	0	0
2	C	53	0	0	5	0
2	D	59	0	0	1	0
2	E	53	0	0	1	0
2	F	62	0	0	4	0
2	G	37	0	0	0	0
2	H	47	0	0	2	0
All	All	7918	0	7392	90	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 6.

All (90) 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:F:57:MET:HE3	2:F:216:HOH:O	1.63	0.97
1:C:94:ASP:HB3	2:C:231:HOH:O	1.70	0.90
1:A:81:ARG:HD3	2:A:235:HOH:O	1.79	0.82
1:E:57:MET:HE3	2:E:208:HOH:O	1.78	0.82
1:H:57:MET:HE3	2:H:201:HOH:O	1.80	0.80
1:F:43:LYS:NZ	2:F:201:HOH:O	2.20	0.74
1:B:45:ARG:HD3	2:H:222:HOH:O	1.94	0.67
1:D:93:LEU:HG	1:D:128:LEU:HD13	1.77	0.67
1:A:81:ARG:CD	2:A:235:HOH:O	2.43	0.63
1:E:130:GLU:HA	1:E:133:GLN:HG2	1.82	0.61
1:A:26:GLN:HB3	1:A:29:GLU:HB2	1.82	0.61
1:C:94:ASP:CA	2:C:231:HOH:O	2.49	0.60
1:C:94:ASP:CB	2:C:231:HOH:O	2.39	0.60
1:F:45[B]:ARG:NH2	2:F:203:HOH:O	2.35	0.59
1:C:94:ASP:HA	2:C:231:HOH:O	2.02	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:130:GLU:HG3	1:E:78:HIS:CE1	2.37	0.59
1:C:16:LYS:HE3	1:C:20:GLU:HG3	1.85	0.58
1:A:78:HIS:HE1	2:A:251:HOH:O	1.87	0.58
1:C:30:VAL:HG21	1:C:62:ILE:HD13	1.86	0.58
1:E:88:ALA:HB1	1:E:128:LEU:HD21	1.88	0.56
1:H:127:ASP:O	1:H:131:ILE:HD12	2.06	0.56
1:G:78[B]:HIS:HD2	1:G:79:TRP:CE2	2.22	0.55
1:E:13:ASP:O	1:E:17:LYS:HG3	2.09	0.53
1:H:84:LEU:HD11	1:H:96:VAL:HG13	1.89	0.53
1:D:131:ILE:O	1:D:133:GLN:HG2	2.09	0.53
1:H:88:ALA:HA	1:H:128:LEU:HD21	1.91	0.52
1:D:28:ASP:O	1:D:32:ILE:HG12	2.10	0.51
1:D:78:HIS:HB3	2:D:248:HOH:O	2.10	0.51
1:D:61:GLU:O	1:D:65:VAL:HG13	2.11	0.51
1:E:56:TYR:CD1	1:E:57:MET:HE2	2.46	0.50
1:F:21:ALA:HA	1:F:26:GLN:HE21	1.76	0.50
1:C:76:MET:HE3	1:C:80:GLY:HA2	1.92	0.50
1:C:43:LYS:HE3	1:C:47:GLY:HA2	1.94	0.49
1:E:56:TYR:HD1	1:E:57:MET:HE2	1.76	0.49
1:F:56:TYR:CE1	1:F:57:MET:HE1	2.48	0.49
1:E:43:LYS:HD3	1:E:49:THR:HG22	1.94	0.49
1:D:42:ALA:O	1:D:50:PRO:HD3	2.12	0.49
1:F:93:LEU:HD21	1:F:127:ASP:HB3	1.95	0.48
1:C:125:ASN:HB3	1:C:128:LEU:HB3	1.95	0.48
1:E:30:VAL:HG21	1:E:62:ILE:HD13	1.95	0.48
1:G:44:ASP:CG	1:G:48:ASN:HB2	2.33	0.48
1:D:93:LEU:HD12	1:D:93:LEU:H	1.78	0.48
1:H:100:LEU:HD23	1:H:104:ALA:HB3	1.97	0.47
1:F:16:LYS:HD2	2:F:261:HOH:O	2.15	0.46
1:B:124:GLY:O	1:B:126:GLU:N	2.49	0.46
1:G:120:SER:OG	1:G:125:ASN:HB2	2.17	0.45
1:F:16:LYS:N	1:F:16:LYS:HD3	2.31	0.45
1:G:68:LYS:HD3	1:G:69:TYR:CE1	2.51	0.45
1:B:127:ASP:N	1:B:127:ASP:OD1	2.50	0.45
1:G:85:HIS:HD2	1:G:119:ILE:HD12	1.82	0.45
1:C:51:LEU:HD11	1:C:63:VAL:HG13	1.98	0.45
1:G:130:GLU:HA	1:G:133:GLN:HG2	1.99	0.45
2:A:219:HOH:O	1:B:78[B]:HIS:CE1	2.70	0.44
1:F:56:TYR:HE1	1:F:57:MET:HE1	1.82	0.44
1:A:79:TRP:C	1:A:111:LYS:HG3	2.38	0.44
1:A:13:ASP:O	1:A:17:LYS:HG2	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:130:GLU:O	1:A:134:LYS:HG3	2.17	0.43
1:B:25:GLY:HA2	1:B:62:ILE:HG13	2.01	0.43
1:D:22:ALA:HA	1:D:62:ILE:HD13	2.00	0.43
1:B:94:ASP:N	1:B:94:ASP:OD1	2.51	0.43
1:F:75:ALA:O	1:F:82:THR:HA	2.19	0.43
1:A:93:LEU:HA	1:A:128:LEU:HD21	1.99	0.43
1:F:88:ALA:HA	1:F:128:LEU:HD21	2.01	0.43
1:B:97:GLU:O	1:B:101:LYS:HG3	2.19	0.42
1:G:42:ALA:O	1:G:50:PRO:HD3	2.19	0.42
1:A:76:MET:HE2	1:A:76:MET:HB2	1.89	0.42
1:E:56:TYR:CD1	1:E:57:MET:CE	3.03	0.42
1:A:84:LEU:HD11	1:A:96:VAL:HG13	2.02	0.42
1:C:43:LYS:HA	1:C:48:ASN:O	2.20	0.42
1:B:16:LYS:O	1:B:20:GLU:HG3	2.19	0.42
1:G:65:VAL:O	1:G:69:TYR:HD1	2.03	0.42
1:G:78[B]:HIS:HD2	1:G:79:TRP:NE1	2.18	0.42
1:D:14:LEU:HB3	1:D:38:ALA:HB2	2.02	0.41
1:D:43:LYS:HA	1:D:48:ASN:O	2.20	0.41
1:B:75:ALA:O	1:B:82:THR:HA	2.20	0.41
1:A:130:GLU:HG3	1:A:134:LYS:HE3	2.02	0.41
1:G:44:ASP:OD2	1:G:48:ASN:HB2	2.21	0.41
1:G:94:ASP:N	1:G:94:ASP:OD1	2.54	0.41
1:B:14:LEU:HD22	1:B:14:LEU:HA	1.96	0.41
1:F:96:VAL:HG21	1:F:128:LEU:HD11	2.02	0.41
1:A:16:LYS:HE2	1:A:16:LYS:HB2	1.57	0.41
1:C:62:ILE:HG13	2:C:214:HOH:O	2.20	0.41
1:D:27:ASP:O	1:D:31:ARG:HG3	2.20	0.41
1:E:42:ALA:O	1:E:50:PRO:HD3	2.21	0.41
1:G:22:ALA:O	1:G:59:HIS:HD2	2.04	0.41
1:G:130:GLU:HA	1:G:133:GLN:HE21	1.86	0.40
1:G:27:ASP:O	1:G:31[B]:ARG:HG3	2.22	0.40
1:F:128:LEU:HD12	1:F:128:LEU:HA	1.82	0.40
1:C:127:ASP:N	1:C:127:ASP:OD1	2.54	0.40
1:D:131:ILE:C	1:D:133:GLN:N	2.75	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:29:GLU:OE1	1:H:69:TYR:OH[2_546]	2.06	0.14

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	120/136 (88%)	119 (99%)	1 (1%)	0	100	100
1	B	120/136 (88%)	119 (99%)	0	1 (1%)	19	13
1	C	121/136 (89%)	118 (98%)	3 (2%)	0	100	100
1	D	120/136 (88%)	119 (99%)	1 (1%)	0	100	100
1	E	119/136 (88%)	118 (99%)	1 (1%)	0	100	100
1	F	120/136 (88%)	119 (99%)	1 (1%)	0	100	100
1	G	123/136 (90%)	122 (99%)	0	1 (1%)	19	13
1	H	120/136 (88%)	120 (100%)	0	0	100	100
All	All	963/1088 (88%)	954 (99%)	7 (1%)	2 (0%)	47	44

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	125	ASN
1	G	125	ASN

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	95/106 (90%)	91 (96%)	4 (4%)	30	27
1	B	95/106 (90%)	89 (94%)	6 (6%)	18	13
1	C	96/106 (91%)	94 (98%)	2 (2%)	53	57

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	D	95/106 (90%)	92 (97%)	3 (3%)	39	38
1	E	94/106 (89%)	89 (95%)	5 (5%)	22	18
1	F	95/106 (90%)	92 (97%)	3 (3%)	39	38
1	G	98/106 (92%)	95 (97%)	3 (3%)	40	40
1	H	95/106 (90%)	91 (96%)	4 (4%)	30	27
All	All	763/848 (90%)	733 (96%)	30 (4%)	31	30

All (30) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	16	LYS
1	A	26	GLN
1	A	27	ASP
1	A	130	GLU
1	B	13	ASP
1	B	14	LEU
1	B	26	GLN
1	B	27	ASP
1	B	32	ILE
1	B	33	LEU
1	C	16	LYS
1	C	28	ASP
1	D	16	LYS
1	D	127	ASP
1	D	132	LEU
1	E	16	LYS
1	E	64	GLU
1	E	126	GLU
1	E	127	ASP
1	E	130	GLU
1	F	16	LYS
1	F	29	GLU
1	F	128	LEU
1	G	13	ASP
1	G	93	LEU
1	G	126	GLU
1	H	93	LEU
1	H	94	ASP
1	H	101	LYS
1	H	130	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:

Mol	Chain	Res	Type
1	C	102	HIS
1	D	102	HIS
1	F	26	GLN
1	F	133	GLN
1	G	123	ASN

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 ⓘ

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	122/136 (89%)	-0.12	1 (0%)	86	85	29, 38, 50, 68	0
1	B	121/136 (88%)	-0.00	1 (0%)	86	85	29, 40, 70, 81	0
1	C	121/136 (88%)	-0.07	2 (1%)	70	68	32, 40, 60, 73	0
1	D	121/136 (88%)	-0.12	0	100	100	32, 39, 58, 69	0
1	E	121/136 (88%)	-0.06	0	100	100	31, 41, 62, 71	0
1	F	121/136 (88%)	-0.09	0	100	100	31, 40, 56, 71	0
1	G	121/136 (88%)	0.09	2 (1%)	70	68	33, 43, 69, 79	0
1	H	121/136 (88%)	0.04	0	100	100	33, 43, 62, 70	0
All	All	969/1088 (89%)	-0.04	6 (0%)	89	88	29, 41, 62, 81	0

All (6) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	G	127	ASP	3.5
1	C	133	GLN	2.6
1	B	130	GLU	2.5
1	C	128	LEU	2.4
1	G	125	ASN	2.1
1	A	134	LYS	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.

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6.4 Ligands ⓘ

There are no ligands in this entry.

6.5 Other polymers ⓘ

There are no such residues in this entry.