Full wwPDB X-ray Structure Validation Report (i)

Dec 2, 2023 – 05:40 pm GMT

PDB ID	:	2J0T
Title	:	Crystal Structure of the Catalytic Domain of MMP-1 in Complex with the Inhibitory Domain of TIMP-1
Authors	:	Iyer, S.; Wei, S.; Brew, K.; Acharya, K.R.
Deposited on	:	2006-08-04
Resolution	:	2.54 Å(reported)

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

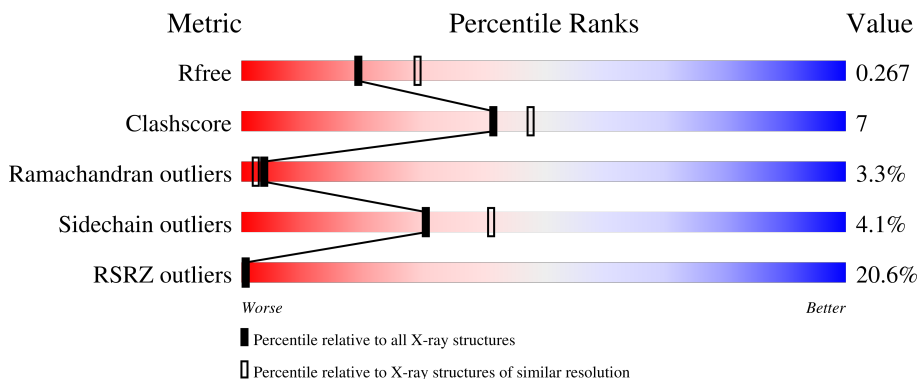|		
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation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

1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 2.54 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		0.267
Clashscore		7
Ramachandran outliers		3.3%
Sidechain outliers		4.1%
RSRZ outliers		20.6%

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	1284 (2.56-2.52)
Clashscore	141614	1332 (2.56-2.52)
Ramachandran outliers	138981	1315 (2.56-2.52)
Sidechain outliers	138945	1315 (2.56-2.52)
RSRZ outliers	127900	1272 (2.56-2.52)

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	170	8% / 86% / 9% / 5%
1	B	170	11% / 90% / 5% / 5%
1	C	170	26% / 86% / 7% · 6%
2	D	126	21% / 78% / 13% / 6% ··
2	E	126	28% / 73% / 16% / 6% · ·

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Mol	Chain	Length	Quality of chain
2	F	126	

2 Entry composition ⓘ

There are 5 unique types of molecules in this entry. The entry contains 6547 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 INTERSTITIAL COLLAGENASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	161	Total	C	N	O	S	0	0	0
			1268	791	227	248	2			
1	B	162	Total	C	N	O	S	0	0	0
			1261	787	224	248	2			
1	C	159	Total	C	N	O	S	0	0	0
			1228	769	218	239	2			

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	100	MET	-	expression tag	UNP P03956
B	100	MET	-	expression tag	UNP P03956
C	100	MET	-	expression tag	UNP P03956

- Molecule 2 is a protein called METALLOPROTEINASE INHIBITOR 1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	D	124	Total	C	N	O	S	0	0	0
			906	574	156	167	9			
2	E	124	Total	C	N	O	S	0	0	0
			907	575	156	167	9			
2	F	124	Total	C	N	O	S	0	0	0
			921	582	161	169	9			

- Molecule 3 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	2	Total	Zn	0	0
			2	2		
3	B	2	Total	Zn	0	0
			2	2		

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	C	2	Total 2	Zn 2	0	0

- Molecule 4 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	3	Total 3	Ca 3	0	0
4	B	3	Total 3	Ca 3	0	0
4	C	3	Total 3	Ca 3	0	0

- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	18	Total 18	O 18	0	0
5	B	9	Total 9	O 9	0	0
5	C	8	Total 8	O 8	0	0
5	D	3	Total 3	O 3	0	0
5	E	1	Total 1	O 1	0	0
5	F	2	Total 2	O 2	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: INTERSTITIAL COLLAGENASE
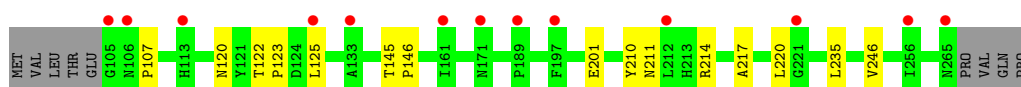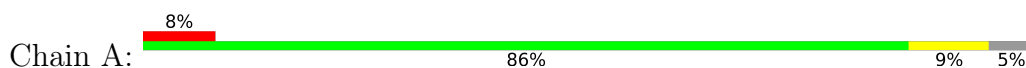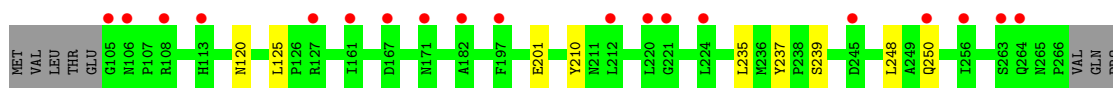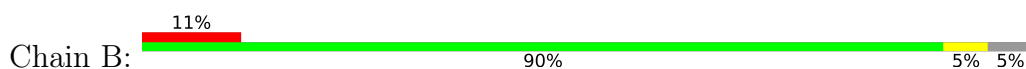
Chain A:

- Molecule 1: INTERSTITIAL COLLAGENASE

Chain B:

- Molecule 1: INTERSTITIAL COLLAGENASE

Chain C:

- Molecule 2: METALLOPROTEINASE INHIBITOR 1

Chain D:

- Molecule 2: METALLOPROTEINASE INHIBITOR 1

Chain E:

28%

73%   16%   6%

C1 P5 C13 N14 V18 K22 F23 V24 G25 T26 P27 E28 V29 N30 T33 L34 Y35 Q36 R37 M42 M45 Y46 K47 G48 F49 Q50 A51 L52 G53 D54 A55 A56 D57 I58 R59 F60 V61 Y62 M66 V69 R75 S76 H77 N78 R79 S80 E81 I85

L89 Q90 D91 G115 K118 T119 Y120 T121 V122 G123 C124 GLU GLU

• Molecule 2: METALLOPROTEINASE INHIBITOR 1

Chain F:

29%

79%   14%

C1 H7 F12 C13 N14 V18 I19 T33 L34 Y35 M42 Y46 K47 G48 F49 Q50 A51 L52 G53 D54 A55 A56 D57 I58 V61 F73 H74 R75 S76 H77 N78 R79 S80 Q90 D91 L94 H95 I96 C99 S107 L108 S109 L110 A111 Q112 G115 F116

T117 K118 T119 Y120 T121 V122 G123 C124 GLU GLU
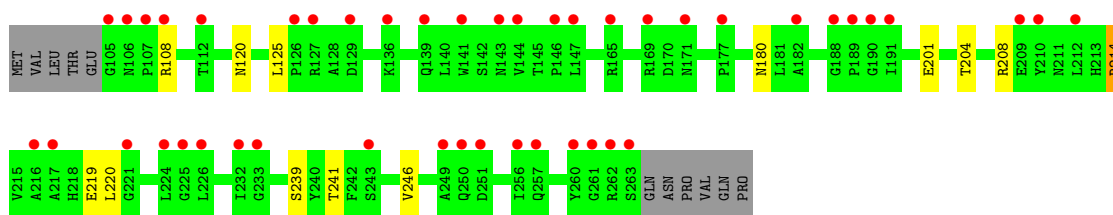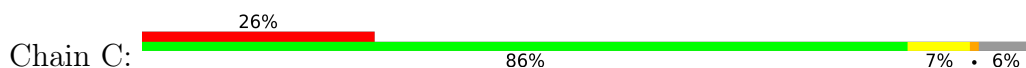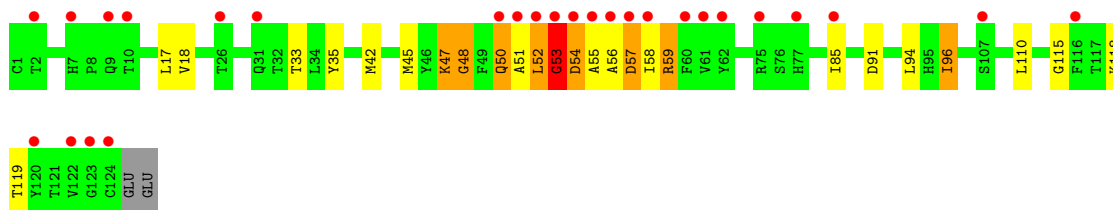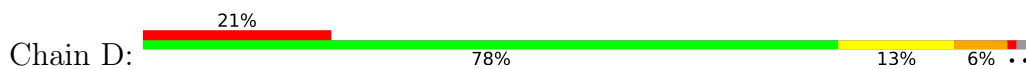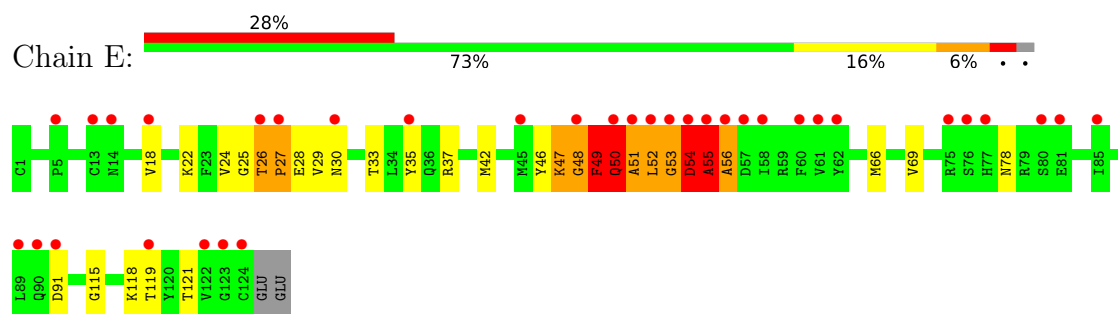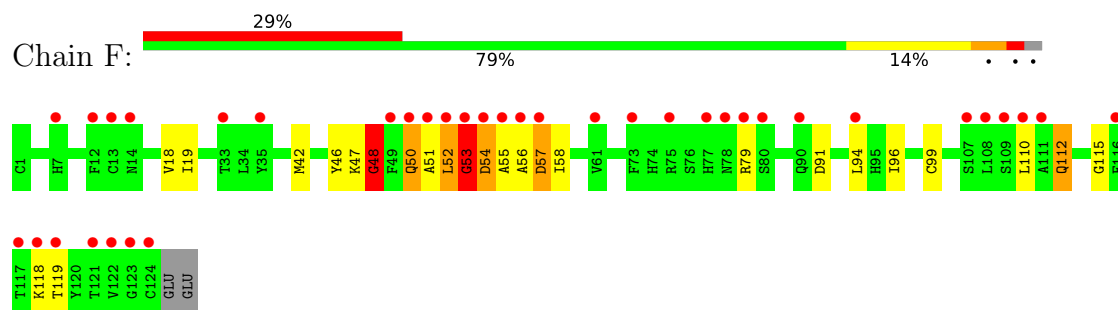
4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	158.10Å 67.85Å 86.24Å 90.00° 100.29° 90.00°	Depositor
Resolution (Å)	23.00 – 2.54 17.99 – 2.54	Depositor EDS
% Data completeness (in resolution range)	98.3 (23.00-2.54) 98.5 (17.99-2.54)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.75 (at 2.56Å)	Xtriage
Refinement program	REFMAC 5.2.0005	Depositor
R, R_{free}	0.248 , 0.275 0.246 , 0.267	Depositor DCC
R_{free} test set	997 reflections (3.40%)	wwPDB-VP
Wilson B-factor (Å^2)	48.1	Xtriage
Anisotropy	0.030	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.36 , 61.4	EDS
L-test for twinning[2]	$< |L| > = 0.48$, $< L^2 > = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.92	EDS
Total number of atoms	6547	wwPDB-VP
Average B, all atoms (Å^2)	44.0	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 50.09 % 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 6.7994e-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 ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: ZN, CA

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	0.33	0/1305	0.47	0/1776
1	B	0.32	0/1298	0.47	0/1766
1	C	0.32	0/1264	0.46	0/1719
2	D	0.35	0/929	0.48	0/1260
2	E	0.44	0/931	0.52	0/1260
2	F	0.43	0/945	0.51	0/1280
All	All	0.36	0/6672	0.48	0/9061

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
2	D	0	8
2	E	0	11
2	F	0	7
All	All	0	26

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (26) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	D	47	LYS	Peptide
2	D	48	GLY	Peptide
2	D	50	GLN	Peptide
2	D	52	LEU	Peptide

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Mol	Chain	Res	Type	Group
2	D	53	GLY	Peptide
2	D	54	ASP	Peptide
2	D	55	ALA	Peptide
2	D	57	ASP	Peptide
2	E	24	VAL	Peptide
2	E	25	GLY	Peptide
2	E	26	THR	Peptide
2	E	47	LYS	Peptide
2	E	48	GLY	Peptide
2	E	49	PHE	Peptide
2	E	50	GLN	Peptide
2	E	52	LEU	Peptide
2	E	53	GLY	Peptide
2	E	54	ASP	Peptide
2	E	55	ALA	Peptide
2	F	48	GLY	Peptide
2	F	50	GLN	Peptide
2	F	52	LEU	Peptide
2	F	53	GLY	Peptide
2	F	54	ASP	Peptide
2	F	55	ALA	Peptide
2	F	57	ASP	Peptide

5.2 Too-close contacts ⓘ

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1268	0	1156	4	0
1	B	1261	0	1139	2	0
1	C	1228	0	1114	4	0
2	D	906	0	831	25	0
2	E	907	0	830	27	0
2	F	921	0	851	27	0
3	A	2	0	0	0	0
3	B	2	0	0	0	0
3	C	2	0	0	0	0
4	A	3	0	0	0	0
4	B	3	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	C	3	0	0	0	0
5	A	18	0	0	0	0
5	B	9	0	0	0	0
5	C	8	0	0	0	0
5	D	3	0	0	0	0
5	E	1	0	0	0	0
5	F	2	0	0	0	0
All	All	6547	0	5921	87	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 7.

All (87) 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)
2:F:42:MET:CE	2:F:58:ILE:HG21	1.42	1.47
2:F:42:MET:CE	2:F:58:ILE:CG2	2.00	1.39
2:F:42:MET:HE3	2:F:58:ILE:CG2	1.59	1.28
2:D:59:ARG:HG2	2:D:59:ARG:HH11	1.01	1.15
2:D:51:ALA:O	2:D:53:GLY:O	1.69	1.11
2:F:51:ALA:O	2:F:53:GLY:O	1.69	1.11
2:F:42:MET:HE3	2:F:58:ILE:HG23	1.10	1.06
2:F:42:MET:HE1	2:F:58:ILE:CG2	1.71	1.05
2:D:45:MET:SD	2:D:48:GLY:HA3	2.02	0.99
2:E:26:THR:OG1	2:E:27:PRO:HD2	1.64	0.98
2:E:47:LYS:HG2	2:E:48:GLY:H	1.22	0.97
2:E:49:PHE:CA	2:E:51:ALA:N	2.30	0.95
2:D:59:ARG:HG2	2:D:59:ARG:NH1	1.72	0.90
2:E:49:PHE:CA	2:E:51:ALA:CA	2.51	0.88
2:D:59:ARG:O	2:D:59:ARG:HG3	1.76	0.86
2:F:42:MET:HE1	2:F:58:ILE:HG21	0.82	0.81
2:E:50:GLN:CA	2:E:53:GLY:O	2.30	0.79
2:E:26:THR:OG1	2:E:27:PRO:CD	2.30	0.79
2:E:47:LYS:HG2	2:E:48:GLY:N	1.90	0.79
2:D:59:ARG:HH11	2:D:59:ARG:CG	1.89	0.76
2:E:18:VAL:HG22	2:E:47:LYS:HB3	1.68	0.74
2:F:51:ALA:C	2:F:53:GLY:O	2.26	0.73
2:D:51:ALA:C	2:D:53:GLY:O	2.26	0.73
1:C:180:ASN:HB3	2:F:99:CYS:SG	2.29	0.72
2:E:115:GLY:HA2	2:E:119:THR:HB	1.71	0.70
2:F:58:ILE:HG23	2:F:58:ILE:O	1.91	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:58:ILE:O	2:D:58:ILE:HG23	1.90	0.70
2:F:52:LEU:C	2:F:53:GLY:O	2.30	0.70
2:E:50:GLN:O	2:E:53:GLY:C	2.30	0.69
2:D:52:LEU:C	2:D:53:GLY:O	2.30	0.69
2:D:85:ILE:HG23	2:D:96:ILE:HD11	1.74	0.69
2:E:53:GLY:O	2:E:55:ALA:CA	2.42	0.68
2:D:18:VAL:HG22	2:D:47:LYS:HB3	1.78	0.65
1:C:214:ARG:HH21	1:C:241:THR:H	1.44	0.65
2:E:50:GLN:O	2:E:54:ASP:N	2.30	0.64
2:E:49:PHE:CA	2:E:51:ALA:H	2.12	0.63
1:A:217:ALA:HB1	1:A:235:LEU:HD21	1.79	0.63
2:D:52:LEU:CA	2:D:53:GLY:O	2.47	0.62
2:F:52:LEU:CA	2:F:53:GLY:O	2.47	0.62
2:F:56:ALA:O	2:F:58:ILE:N	2.34	0.61
2:D:56:ALA:O	2:D:58:ILE:N	2.34	0.61
2:F:18:VAL:HG22	2:F:47:LYS:HB3	1.81	0.61
2:D:58:ILE:HD11	2:D:94:LEU:HB3	1.82	0.61
2:F:58:ILE:CD1	2:F:94:LEU:HB2	2.31	0.60
2:F:58:ILE:HD11	2:F:94:LEU:CB	2.32	0.60
2:D:59:ARG:NH1	2:D:59:ARG:CG	2.55	0.60
1:A:211:ASN:HD22	1:A:214:ARG:H	1.47	0.60
2:F:19:ILE:HD13	2:F:42:MET:HE2	1.86	0.56
2:F:18:VAL:HG23	2:F:46:TYR:HB2	1.87	0.56
1:C:204:THR:HG21	1:C:208:ARG:HB3	1.87	0.56
2:E:30:ASN:HD22	2:E:33:THR:HG22	1.70	0.56
2:F:58:ILE:HD11	2:F:94:LEU:HB3	1.88	0.56
2:E:53:GLY:C	2:E:55:ALA:CA	2.75	0.55
2:E:33:THR:HG23	2:E:35:TYR:H	1.72	0.55
2:E:49:PHE:C	2:E:51:ALA:N	2.58	0.54
2:D:115:GLY:HA2	2:D:119:THR:HB	1.89	0.53
2:F:115:GLY:HA2	2:F:119:THR:HB	1.91	0.53
2:E:53:GLY:C	2:E:55:ALA:N	2.63	0.52
2:D:47:LYS:HG2	2:D:48:GLY:N	2.24	0.51
2:F:18:VAL:HG22	2:F:47:LYS:CB	2.41	0.50
2:E:50:GLN:O	2:E:53:GLY:O	2.30	0.50
2:E:55:ALA:O	2:E:56:ALA:O	2.30	0.50
2:D:47:LYS:HG2	2:D:48:GLY:H	1.75	0.50
2:D:85:ILE:HG23	2:D:96:ILE:CD1	2.40	0.49
2:D:56:ALA:O	2:D:58:ILE:HB	2.13	0.49
2:F:56:ALA:O	2:F:58:ILE:HB	2.13	0.48
2:F:58:ILE:HD13	2:F:94:LEU:HB2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:66:MET:HB2	2:E:69:VAL:HG12	1.95	0.48
2:E:18:VAL:HG23	2:E:46:TYR:HB2	1.95	0.48
2:E:26:THR:HA	2:E:27:PRO:HD3	1.40	0.47
2:D:58:ILE:O	2:D:58:ILE:CG2	2.61	0.46
1:A:145:THR:HB	1:A:146:PRO:HD2	1.98	0.45
2:E:26:THR:HG1	2:E:27:PRO:HD2	1.76	0.44
2:E:28:GLU:OE1	2:E:37:ARG:NE	2.43	0.43
2:D:17:LEU:HA	2:D:47:LYS:O	2.17	0.43
2:D:58:ILE:CD1	2:D:94:LEU:HB3	2.48	0.43
2:E:26:THR:CB	2:E:27:PRO:CD	2.87	0.43
1:C:180:ASN:CB	2:F:99:CYS:SG	3.04	0.43
1:A:122:THR:HA	1:A:123:PRO:HD3	1.92	0.42
2:D:58:ILE:HD11	2:D:94:LEU:CB	2.50	0.42
2:D:33:THR:HG23	2:D:35:TYR:HB2	2.01	0.41
2:F:79:ARG:H	2:F:79:ARG:HG2	1.74	0.41
1:B:237:TYR:CE2	1:B:239:SER:HB2	2.56	0.41
1:B:235:LEU:HD23	1:B:248:LEU:HD23	2.01	0.41
2:F:110:LEU:C	2:F:112:GLN:H	2.24	0.41
2:E:50:GLN:C	2:E:53:GLY:O	2.59	0.41
2:F:48:GLY:O	2:F:51:ALA:CA	2.69	0.41

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	159/170 (94%)	155 (98%)	2 (1%)	2 (1%)	12	16
1	B	160/170 (94%)	157 (98%)	2 (1%)	1 (1%)	25	34
1	C	157/170 (92%)	150 (96%)	7 (4%)	0	100	100
2	D	122/126 (97%)	105 (86%)	11 (9%)	6 (5%)	2	1

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	E	122/126 (97%)	98 (80%)	12 (10%)	12 (10%)	0	0
2	F	122/126 (97%)	101 (83%)	14 (12%)	7 (6%)	1	0
All	All	842/888 (95%)	766 (91%)	48 (6%)	28 (3%)	4	2

All (28) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	D	50	GLN
2	D	53	GLY
2	D	57	ASP
2	D	118	LYS
2	E	49	PHE
2	E	52	LEU
2	E	55	ALA
2	E	56	ALA
2	E	118	LYS
2	F	50	GLN
2	F	53	GLY
2	F	57	ASP
1	A	210	TYR
2	D	54	ASP
2	E	51	ALA
2	E	54	ASP
2	F	54	ASP
1	A	107	PRO
2	E	27	PRO
2	E	78	ASN
2	E	50	GLN
2	F	91	ASP
2	F	118	LYS
1	B	210	TYR
2	D	91	ASP
2	E	91	ASP
2	E	29	VAL
2	F	48	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	132/142 (93%)	127 (96%)	5 (4%)	33	45
1	B	130/142 (92%)	126 (97%)	4 (3%)	40	54
1	C	125/142 (88%)	116 (93%)	9 (7%)	14	18
2	D	92/109 (84%)	88 (96%)	4 (4%)	29	39
2	E	92/109 (84%)	89 (97%)	3 (3%)	38	51
2	F	95/109 (87%)	93 (98%)	2 (2%)	53	68
All	All	666/753 (88%)	639 (96%)	27 (4%)	30	41

All (27) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	120	ASN
1	A	125	LEU
1	A	201	GLU
1	A	220	LEU
1	A	246	VAL
1	B	120	ASN
1	B	125	LEU
1	B	201	GLU
1	B	250	GLN
1	C	108	ARG
1	C	120	ASN
1	C	125	LEU
1	C	201	GLU
1	C	214	ARG
1	C	219	GLU
1	C	220	LEU
1	C	239	SER
1	C	246	VAL
2	D	42	MET
2	D	59	ARG
2	D	96	ILE
2	D	110	LEU
2	E	22	LYS
2	E	42	MET
2	E	121	THR
2	F	96	ILE
2	F	112	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (11) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	113	HIS
1	A	120	ASN
1	A	211	ASN
1	B	120	ASN
1	C	111	GLN
1	C	120	ASN
1	C	257	GLN
2	D	30	ASN
2	E	30	ASN
2	E	106	ASN
2	F	9	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 ⓘ

Of 15 ligands modelled in this entry, 15 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 ⓘ

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(Å²)	Q<0.9
1	A	161/170 (94%)	0.72	13 (8%)	12	15	41, 46, 51, 57	0
1	B	162/170 (95%)	0.76	19 (11%)	4	6	40, 45, 51, 55	0
1	C	159/170 (93%)	1.37	45 (28%)	0	0	41, 45, 47, 48	0
2	D	124/126 (98%)	1.43	27 (21%)	0	0	26, 44, 47, 48	0
2	E	124/126 (98%)	1.61	35 (28%)	0	0	39, 44, 47, 50	0
2	F	124/126 (98%)	1.68	37 (29%)	0	0	26, 44, 47, 49	0
All	All	854/888 (96%)	1.22	176 (20%)	1	1	26, 45, 49, 57	0

All (176) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	F	56	ALA	14.1
1	C	105	GLY	10.6
2	E	52	LEU	10.2
2	D	56	ALA	9.4
2	D	122	VAL	9.2
1	B	105	GLY	9.0
2	F	53	GLY	9.0
2	F	55	ALA	8.7
2	D	53	GLY	8.6
2	E	124	CYS	8.6
2	D	54	ASP	8.2
2	E	51	ALA	8.0
2	F	52	LEU	8.0
2	E	54	ASP	8.0
2	E	123	GLY	7.7
2	D	124	CYS	7.5
2	E	55	ALA	7.2
2	F	57	ASP	7.1
2	D	77	HIS	7.0

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Full wwPDB X-ray Structure Validation Report

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Mol	Chain	Res	Type	RSRZ
2	E	77	HIS	6.7
2	F	54	ASP	6.6
2	D	57	ASP	6.6
2	F	110	LEU	6.4
2	D	55	ALA	6.1
2	D	52	LEU	5.8
2	E	45	MET	5.8
1	A	106	ASN	5.7
2	F	122	VAL	5.6
2	E	53	GLY	5.5
2	E	57	ASP	5.5
1	A	105	GLY	5.5
2	F	124	CYS	5.5
2	E	56	ALA	5.4
2	F	123	GLY	5.2
1	C	106	ASN	5.2
2	F	77	HIS	5.0
2	F	51	ALA	5.0
2	F	121	THR	5.0
2	F	107	SER	4.8
1	B	106	ASN	4.8
2	F	117	THR	4.6
2	E	80	SER	4.6
2	D	107	SER	4.4
1	C	224	LEU	4.4
1	C	127	ARG	4.1
1	C	190	GLY	4.0
2	D	123	GLY	4.0
2	F	50	GLN	4.0
1	C	108	ARG	4.0
1	C	112	THR	4.0
2	E	48	GLY	4.0
1	C	263	SER	3.9
1	C	256	ILE	3.9
1	C	249	ALA	3.9
2	F	49	PHE	3.8
2	F	109	SER	3.8
2	E	91	ASP	3.8
2	D	51	ALA	3.7
1	C	261	GLY	3.7
1	C	189	PRO	3.7
2	E	58	ILE	3.7

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Mol	Chain	Res	Type	RSRZ
1	C	107	PRO	3.6
2	E	5	PRO	3.5
2	F	13	CYS	3.4
1	C	225	GLY	3.4
1	C	171	ASN	3.4
1	C	147	LEU	3.4
1	B	264	GLN	3.4
1	C	221	GLY	3.3
2	E	119	THR	3.3
1	B	167	ASP	3.2
2	E	50	GLN	3.2
2	F	78	ASN	3.1
2	F	108	LEU	3.1
2	D	116	PHE	3.1
1	B	212	LEU	3.1
1	C	226	LEU	3.1
1	B	113	HIS	3.1
2	D	26	THR	3.0
1	B	108	ARG	3.0
2	F	118	LYS	3.0
2	D	61	VAL	3.0
1	C	233	GLY	3.0
1	B	171	ASN	3.0
2	D	9	GLN	3.0
1	C	232	ILE	3.0
1	A	171	ASN	3.0
1	C	250	GLN	3.0
2	E	76	SER	2.9
2	E	85	ILE	2.9
2	F	12	PHE	2.9
1	C	212	LEU	2.9
2	F	7	HIS	2.9
1	A	256	ILE	2.9
1	B	221	GLY	2.9
1	B	256	ILE	2.9
1	C	143	ASN	2.8
2	E	13	CYS	2.8
1	A	125	LEU	2.8
2	E	75	ARG	2.8
1	A	197	PHE	2.8
2	E	61	VAL	2.8
2	D	7	HIS	2.8

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Mol	Chain	Res	Type	RSRZ
1	A	113	HIS	2.8
1	C	129	ASP	2.8
2	E	26	THR	2.8
1	B	197	PHE	2.7
2	D	60	PHE	2.7
2	E	14	ASN	2.7
2	E	27	PRO	2.7
1	B	250	GLN	2.7
2	D	31	GLN	2.7
2	D	85	ILE	2.7
2	E	35	TYR	2.7
1	A	189	PRO	2.7
2	F	61	VAL	2.6
2	D	50	GLN	2.6
1	C	251	ASP	2.6
1	C	262	ARG	2.6
1	B	224	LEU	2.6
1	C	136	LYS	2.6
2	F	80	SER	2.6
1	C	126	PRO	2.5
1	C	217	ALA	2.5
1	C	210	TYR	2.5
1	C	260	TYR	2.5
1	A	221	GLY	2.5
1	C	139	GLN	2.4
1	C	141	TRP	2.4
2	E	60	PHE	2.4
1	A	212	LEU	2.4
2	D	75	ARG	2.4
2	D	120	TYR	2.4
2	E	62	TYR	2.4
2	E	89	LEU	2.4
2	E	30	ASN	2.4
2	F	79	ARG	2.3
2	F	94	LEU	2.3
2	E	122	VAL	2.3
2	F	33	THR	2.3
2	F	111	ALA	2.3
1	A	265	ASN	2.3
1	B	182	ALA	2.3
2	E	90	GLN	2.3
1	C	146	PRO	2.3

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Mol	Chain	Res	Type	RSRZ
2	F	75	ARG	2.3
1	B	263	SER	2.3
1	C	191	ILE	2.3
1	B	245	ASP	2.3
2	F	116	PHE	2.3
1	B	220	LEU	2.3
1	B	127	ARG	2.2
1	C	188	GLY	2.2
1	C	169	ARG	2.2
2	F	35	TYR	2.2
1	C	144	VAL	2.2
2	E	18	VAL	2.2
2	F	73	PHE	2.2
2	F	14	ASN	2.1
1	C	209	GLU	2.1
1	A	161	ILE	2.1
2	D	58	ILE	2.1
1	C	165	ARG	2.1
2	F	90	GLN	2.1
2	D	2	THR	2.1
2	E	81	GLU	2.1
1	C	243	SER	2.1
1	A	133	ALA	2.1
2	D	10	THR	2.0
2	F	119	THR	2.0
2	D	62	TYR	2.0
1	C	216	ALA	2.0
1	C	177	PRO	2.0
1	C	182	ALA	2.0
1	B	161	ILE	2.0
1	C	257	GLN	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 ⓘ

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, 95th 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
4	CA	B	1269	1/1	0.89	0.15	40,40,40,40	0
4	CA	A	1270	1/1	0.92	0.11	51,51,51,51	0
4	CA	A	1269	1/1	0.92	0.11	42,42,42,42	0
4	CA	C	1266	1/1	0.92	0.11	66,66,66,66	0
4	CA	B	1271	1/1	0.96	0.14	48,48,48,48	0
4	CA	C	1267	1/1	0.97	0.12	40,40,40,40	0
4	CA	C	1268	1/1	0.97	0.08	43,43,43,43	0
3	ZN	A	1267	1/1	0.98	0.11	29,29,29,29	0
3	ZN	B	1267	1/1	0.98	0.12	30,30,30,30	0
4	CA	A	1268	1/1	0.98	0.08	32,32,32,32	0
4	CA	B	1270	1/1	0.98	0.11	40,40,40,40	0
3	ZN	B	1268	1/1	0.99	0.10	34,34,34,34	0
3	ZN	C	1264	1/1	0.99	0.11	45,45,45,45	0
3	ZN	C	1265	1/1	0.99	0.07	46,46,46,46	0
3	ZN	A	1266	1/1	0.99	0.14	33,33,33,33	0

6.5 Other polymers ⓘ

There are no such residues in this entry.