Full wwPDB X-ray Structure Validation Report ⓘ

Apr 21, 2026 – 03:20 AM JST

PDB ID	:	9UP1 / pdb_00009up1
Title	:	Tacheng tick virus 1 nucleoprotein-Nucle acid complex
Authors	:	Li, Z.; Sun, L.
Deposited on	:	2025-04-27
Resolution	:	2.50 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:

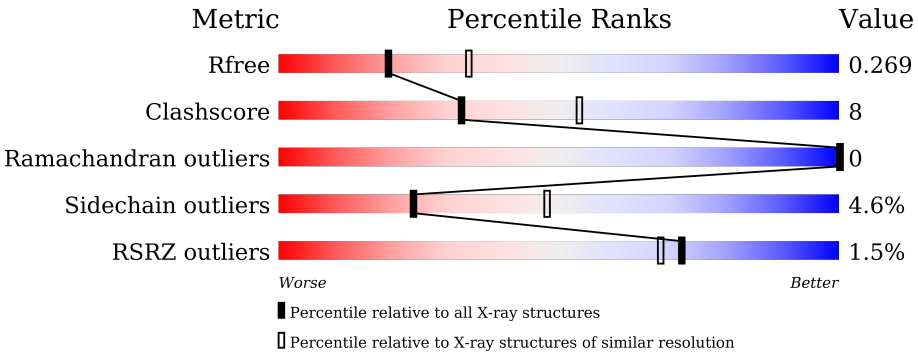
MolProbity	:	4-5-2 with Phenix2.0
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

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 2.50 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}	180053	5829 (2.50-2.50)
Clashscore	190562	6492 (2.50-2.50)
Ramachandran outliers	187476	6378 (2.50-2.50)
Sidechain outliers	187428	6380 (2.50-2.50)
RSRZ outliers	180081	5833 (2.50-2.50)

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	490	2% 78% 15%
1	B	490	3% 77% 18%
2	C	13	38% 62%
3	D	8	50% 50%

2 Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 7903 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 Nucleoprotein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	468	Total	C	N	O	S	0	0	0
			3683	2349	623	691	20			
1	B	469	Total	C	N	O	S	0	0	0
			3694	2359	625	690	20			

- Molecule 2 is a DNA chain called DNA (5'-D(P*CP*CP*TP*CP*CP*CP*GP*CP*AP*CP *TP*TP*C)-3').

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	C	13	Total	C	N	O	P	0	0	0
			255	122	40	80	13			

- Molecule 3 is a DNA chain called DNA (5'-D(P*CP*GP*TP*AP*AP*TP*CP*C)-3').

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	D	8	Total	C	N	O	P	0	0	0
			161	77	28	48	8			

- Molecule 4 is water.

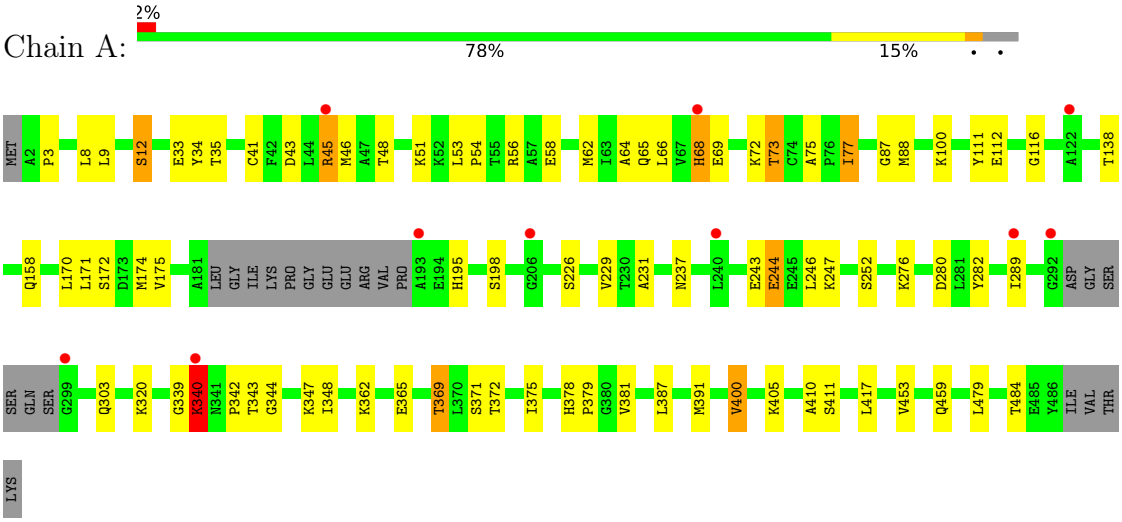
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	33	Total	O	0	0
			33	33		
4	B	71	Total	O	0	0
			71	71		
4	C	1	Total	O	0	0
			1	1		
4	D	5	Total	O	0	0
			5	5		

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.

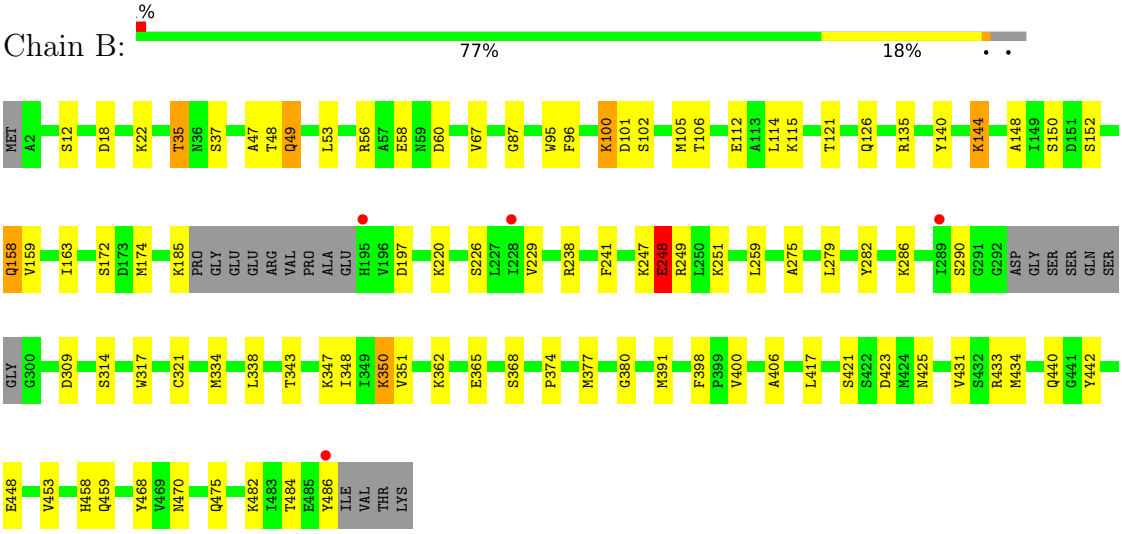
• Molecule 1: Nucleoprotein

Chain A:



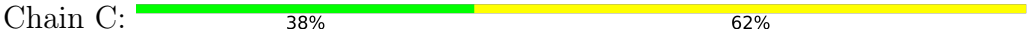
• Molecule 1: Nucleoprotein

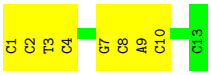
Chain B:



• Molecule 2: DNA (5'-D(P*CP*CP*TP*CP*CP*CP*GP*CP*AP*CP*TP*TP*C)-3')

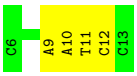
Chain C:





• Molecule 3: DNA (5'-D(P*CP*GP*TP*AP*AP*TP*CP*C)-3')

Chain D:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	90.77Å 60.24Å 96.02Å 90.00° 93.01° 90.00°	Depositor
Resolution (Å)	33.42 – 2.50 33.42 – 2.50	Depositor EDS
% Data completeness (in resolution range)	99.7 (33.42-2.50) 99.6 (33.42-2.50)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.42 (at 2.51Å)	Xtriage
Refinement program	PHENIX 1.19.2_4158, PHENIX 1.19.2_4158	Depositor
R, R_{free}	0.199 , 0.267 0.199 , 0.269	Depositor DCC
R_{free} test set	1716 reflections (4.76%)	wwPDB-VP
Wilson B-factor (Å^2)	46.4	Xtriage
Anisotropy	0.564	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 36.9	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	7903	wwPDB-VP
Average B, all atoms (Å^2)	56.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.26% 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	0.42	1/3771 (0.0%)	0.69	7/5104 (0.1%)
1	B	0.42	0/3782	0.63	2/5118 (0.0%)
2	C	0.43	0/282	0.62	0/430
3	D	0.55	0/179	0.58	0/273
All	All	0.42	1/8014 (0.0%)	0.65	9/10925 (0.1%)

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	A	0	2
1	B	0	1
All	All	0	3

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	340	LYS	CG-CD	-5.64	1.35	1.52

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	339	GLY	CA-C-N	-8.43	105.44	121.54
1	A	339	GLY	C-N-CA	-8.43	105.44	121.54
1	A	112	GLU	CA-CB-CG	7.45	128.99	114.10
1	A	340	LYS	CB-CG-CD	6.91	127.20	111.30
1	A	51	LYS	CA-CB-CG	6.08	126.27	114.10
1	B	158	GLN	CA-CB-CG	5.76	125.61	114.10
1	B	350	LYS	CD-CE-NZ	-5.24	95.15	111.90
1	A	68	HIS	N-CA-CB	-5.22	102.44	110.12
1	A	112	GLU	N-CA-CB	-5.16	102.60	110.33

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	340	LYS	Peptide
1	A	45	ARG	Sidechain
1	B	248	GLU	Sidechain

5.2 Too-close contacts (i)

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	3683	0	3642	56	0
1	B	3694	0	3666	60	1
2	C	255	0	147	8	0
3	D	161	0	91	4	0
4	A	33	0	0	0	0
4	B	71	0	0	1	0
4	C	1	0	0	0	0
4	D	5	0	0	0	0
All	All	7903	0	7546	121	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 8.

All (121) 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:72:LYS:HD3	1:A:340:LYS:HE2	1.42	0.99
1:A:340:LYS:HB2	1:A:410:ALA:HA	1.44	0.97
1:A:68:HIS:CD2	1:A:342:PRO:HD3	2.16	0.80
1:A:45:ARG:NH2	1:A:69:GLU:HB3	1.97	0.80
1:A:9:LEU:HD12	1:A:400:VAL:HG22	1.64	0.77
1:B:343:THR:HG23	1:B:347:LYS:HD2	1.67	0.75
1:A:69:GLU:HA	1:A:72:LYS:HE2	1.70	0.73
1:B:56:ARG:NH2	1:B:448:GLU:OE2	2.23	0.72
1:A:276:LYS:NZ	1:A:280:ASP:OD2	2.22	0.71
1:B:56:ARG:HH22	1:B:448:GLU:CD	1.98	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:9:DA:H2"	2:C:10:DC:H5'	1.73	0.70
1:B:334:MET:HE1	1:B:351:VAL:HG12	1.74	0.70
1:A:68:HIS:CD2	1:A:340:LYS:NZ	2.63	0.67
1:B:423:ASP:O	1:B:486:TYR:OH	2.06	0.67
1:A:343:THR:HG23	1:A:347:LYS:HB3	1.75	0.67
1:A:68:HIS:ND1	1:A:411:SER:OG	2.27	0.65
1:A:171:LEU:O	1:A:175:VAL:HG23	1.99	0.63
1:B:158:GLN:HG2	1:B:486:TYR:CD1	2.33	0.63
1:A:243:GLU:OE2	1:A:282:TYR:OH	2.17	0.62
1:B:53:LEU:HD23	1:B:58:GLU:HB3	1.82	0.61
1:A:344:GLY:O	1:A:348:ILE:HD12	2.01	0.60
1:A:116:GLY:HA2	1:A:369:THR:O	2.02	0.59
1:B:314:SER:HA	1:B:317:TRP:CD1	2.37	0.59
1:B:417:LEU:HD21	1:B:459:GLN:HB3	1.84	0.59
1:A:226:SER:HB2	1:A:229:VAL:HG23	1.83	0.59
1:B:121:THR:HG21	1:B:238:ARG:HA	1.84	0.59
1:B:150:SER:O	1:B:475:GLN:NE2	2.35	0.59
1:A:237:ASN:ND2	2:C:4:DC:O2	2.35	0.59
1:A:195:HIS:CD2	1:A:231:ALA:HB2	2.39	0.57
1:B:334:MET:HE3	1:B:338:LEU:HD11	1.87	0.57
2:C:9:DA:C2'	2:C:10:DC:H5'	2.35	0.56
1:B:321:CYS:HA	1:B:362:LYS:HD3	1.88	0.55
1:A:68:HIS:CE1	1:A:340:LYS:HG3	2.43	0.54
1:A:68:HIS:NE2	1:A:340:LYS:NZ	2.56	0.54
1:B:49:GLN:HG2	1:B:440:GLN:OE1	2.07	0.54
1:B:96:PHE:O	1:B:100:LYS:HG2	2.09	0.53
1:B:241:PHE:CE2	1:B:249:ARG:HD3	2.44	0.53
1:A:378:HIS:CD2	1:A:379:PRO:HD2	2.43	0.53
1:B:60:ASP:OD1	1:B:442:TYR:OH	2.21	0.53
1:B:18:ASP:O	1:B:22:LYS:HG3	2.08	0.53
1:B:334:MET:HE1	1:B:351:VAL:CG1	2.37	0.52
1:A:170:LEU:O	1:A:174:MET:HG3	2.09	0.52
1:B:112:GLU:HG3	1:B:115:LYS:NZ	2.25	0.52
1:A:12:SER:HA	1:A:87:GLY:HA3	1.91	0.52
1:B:282:TYR:CE1	1:B:286:LYS:HG3	2.45	0.52
1:A:362:LYS:HA	1:A:365:GLU:HG2	1.93	0.51
1:B:35:THR:HB	4:B:545:HOH:O	2.09	0.51
1:B:158:GLN:HG2	1:B:486:TYR:CE1	2.45	0.51
1:B:158:GLN:HB2	1:B:484:THR:OG1	2.11	0.51
1:A:72:LYS:HG3	1:A:73:THR:N	2.27	0.50
1:A:45:ARG:CZ	1:A:69:GLU:HB3	2.40	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:64:ALA:O	1:A:68:HIS:HB2	2.12	0.50
3:D:10:DA:H8	3:D:10:DA:O5'	1.95	0.50
1:A:62:MET:HE3	1:A:66:LEU:HD21	1.93	0.49
1:A:375:ILE:HD12	2:C:10:DC:N3	2.26	0.49
1:B:421:SER:HA	1:B:425:ASN:OD1	2.13	0.49
1:A:68:HIS:CE1	1:A:340:LYS:HZ2	2.30	0.49
1:B:112:GLU:HA	1:B:115:LYS:HD3	1.95	0.49
1:B:317:TRP:HD1	1:B:391:MET:CG	2.25	0.48
1:A:303:GLN:OE1	2:C:7:DG:H5"	2.12	0.48
1:B:47:ALA:HB2	1:B:433:ARG:HG2	1.95	0.48
1:B:159:VAL:HB	1:B:163:ILE:HD11	1.95	0.48
1:B:67:VAL:HG22	1:B:434:MET:HE2	1.96	0.48
2:C:1:DC:H2"	2:C:2:DC:H5'	1.96	0.47
1:A:3:PRO:HG3	1:B:259:LEU:HD22	1.95	0.47
1:B:135:ARG:HH21	1:B:309:ASP:CG	2.22	0.47
1:B:431:VAL:HG13	1:B:453:VAL:HG22	1.97	0.47
1:A:88:MET:HE1	1:A:138:THR:HB	1.95	0.47
1:A:195:HIS:CE1	2:C:3:DT:H2"	2.49	0.47
1:B:148:ALA:HA	1:B:470:ASN:HB3	1.97	0.47
1:B:174:MET:CE	1:B:458:HIS:HB2	2.46	0.46
1:A:405:LYS:HE3	1:A:405:LYS:HA	1.98	0.46
1:A:75:ALA:O	1:A:77:ILE:HD12	2.15	0.46
1:B:174:MET:HE1	1:B:458:HIS:HB2	1.97	0.46
1:A:43:ASP:OD2	1:B:144:LYS:NZ	2.49	0.46
1:A:68:HIS:NE2	1:A:342:PRO:HD3	2.31	0.46
3:D:11:DT:H2'	3:D:12:DC:O4'	2.15	0.45
1:A:41:CYS:HB2	1:A:73:THR:HG23	1.97	0.45
1:A:378:HIS:CG	1:A:379:PRO:HD2	2.52	0.45
1:B:12:SER:HA	1:B:87:GLY:HA3	1.98	0.45
1:B:343:THR:HG22	1:B:348:ILE:HG13	1.98	0.45
1:B:158:GLN:HA	1:B:484:THR:O	2.17	0.44
1:B:317:TRP:CH2	1:B:380:GLY:C	2.95	0.44
1:B:334:MET:HE3	1:B:338:LEU:CD1	2.46	0.44
1:B:95:TRP:HZ3	1:B:105:MET:HE2	1.82	0.44
1:A:65:GLN:O	1:A:69:GLU:HG2	2.18	0.44
1:B:185:LYS:HD2	1:B:185:LYS:O	2.17	0.44
1:A:33:GLU:HB3	1:A:34:TYR:CD1	2.53	0.44
1:A:244:GLU:HA	1:A:244:GLU:OE1	2.18	0.43
3:D:9:DA:H8	3:D:9:DA:H3'	1.82	0.43
1:B:112:GLU:HG3	1:B:115:LYS:HZ3	1.83	0.43
1:B:248:GLU:O	1:B:249:ARG:C	2.60	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:317:TRP:HH2	1:B:380:GLY:C	2.27	0.43
1:A:243:GLU:O	1:A:247:LYS:HG3	2.18	0.43
1:B:35:THR:HG23	1:B:37:SER:O	2.19	0.43
1:A:65:GLN:O	1:A:68:HIS:HB3	2.19	0.43
1:B:140:TYR:OH	1:B:468:TYR:HB3	2.18	0.43
1:B:398:PHE:HB3	1:B:406:ALA:HA	2.01	0.43
1:A:479:LEU:HD11	2:C:8:DC:H41	1.84	0.43
1:A:289:ILE:HD12	1:A:289:ILE:HA	1.81	0.42
1:A:8:LEU:HD23	1:A:8:LEU:HA	1.87	0.42
1:B:317:TRP:HD1	1:B:391:MET:HG2	1.84	0.42
1:B:417:LEU:HD23	1:B:417:LEU:HA	1.91	0.42
1:A:417:LEU:HD21	1:A:459:GLN:HB3	2.01	0.42
1:B:275:ALA:O	1:B:279:LEU:HB2	2.19	0.42
1:A:54:PRO:HD2	1:A:58:GLU:CD	2.44	0.41
1:B:282:TYR:OH	1:B:286:LYS:HE2	2.20	0.41
1:B:226:SER:OG	1:B:229:VAL:HG23	2.21	0.41
3:D:9:DA:H3'	3:D:9:DA:C8	2.56	0.41
1:A:111:TYR:CD1	1:A:111:TYR:C	2.98	0.41
1:A:246:LEU:HD12	1:A:246:LEU:HA	1.79	0.41
1:A:391:MET:HE2	1:A:391:MET:HB3	1.95	0.41
1:B:106:THR:HB	1:B:126:GLN:OE1	2.21	0.41
1:B:317:TRP:CZ3	1:B:380:GLY:O	2.74	0.41
1:B:238:ARG:H	1:B:238:ARG:HG3	1.55	0.41
1:A:45:ARG:HG3	1:A:46:MET:O	2.20	0.40
1:B:220:LYS:HG2	1:B:226:SER:HA	2.03	0.40
1:A:53:LEU:HA	1:A:53:LEU:HD23	1.83	0.40
1:A:348:ILE:HG21	1:A:387:LEU:HD23	2.03	0.40
1:A:158:GLN:HA	1:A:484:THR:O	2.22	0.40
1:B:374:PRO:O	1:B:377:MET:HB3	2.22	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:B:101:ASP:OD2	1:B:350:LYS:NZ[2_556]	1.90	0.30

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	462/490 (94%)	446 (96%)	16 (4%)	0	100	100
1	B	463/490 (94%)	453 (98%)	10 (2%)	0	100	100
All	All	925/980 (94%)	899 (97%)	26 (3%)	0	100	100

There are no Ramachandran outliers to report.

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	394/413 (95%)	376 (95%)	18 (5%)	24	48
1	B	396/413 (96%)	378 (96%)	18 (4%)	24	49
All	All	790/826 (96%)	754 (95%)	36 (5%)	24	48

All (36) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	12	SER
1	A	35	THR
1	A	48	THR
1	A	56	ARG
1	A	73	THR
1	A	77	ILE
1	A	100	LYS
1	A	172	SER

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Mol	Chain	Res	Type
1	A	198	SER
1	A	244	GLU
1	A	252	SER
1	A	320	LYS
1	A	369	THR
1	A	371	SER
1	A	372	THR
1	A	381	VAL
1	A	400	VAL
1	A	453	VAL
1	B	35	THR
1	B	48	THR
1	B	49	GLN
1	B	100	LYS
1	B	102	SER
1	B	114	LEU
1	B	144	LYS
1	B	152	SER
1	B	172	SER
1	B	197	ASP
1	B	247	LYS
1	B	248	GLU
1	B	251	LYS
1	B	290	SER
1	B	365	GLU
1	B	368	SER
1	B	400	VAL
1	B	482	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (9) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	158	GLN
1	A	225	ASN
1	A	341	ASN
1	A	473	GLN
1	B	65	GLN
1	B	99	ASN
1	B	110	ASN
1	B	133	GLN
1	B	303	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	468/490 (95%)	0.09	10 (2%) 63 59	39, 56, 86, 135	0
1	B	469/490 (95%)	-0.17	4 (0%) 81 78	36, 48, 78, 126	0
2	C	13/13 (100%)	0.41	0 100 100	55, 85, 105, 108	0
3	D	8/8 (100%)	-0.16	0 100 100	44, 52, 63, 112	0
All	All	958/1001 (95%)	-0.03	14 (1%) 72 68	36, 52, 85, 135	0

All (14) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	68	HIS	4.5
1	A	193	ALA	4.4
1	A	292	GLY	3.6
1	B	486	TYR	3.3
1	A	340	LYS	3.3
1	A	240	LEU	3.2
1	A	289	ILE	3.1
1	B	289	ILE	2.8
1	B	228	ILE	2.3
1	B	195	HIS	2.3
1	A	122	ALA	2.2
1	A	299	GLY	2.2
1	A	206	GLY	2.0
1	A	45	ARG	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 (i)

There are no oligosaccharides 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.