WORLDWIDE PDB

PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report (i)

Oct 17, 2023 – 09:49 PM EDT

PDB ID	:	2DEY
Title	:	Crystal structure of human peptidylarginine deiminase 4 in complex with histone H4 N-terminal tail including Arg3
Authors	:	Arita, K.; Shimizu, T.; Hashimoto, H.; Hidaka, Y.; Yamada, M.; Sato, M.
Deposited on	:	2006-02-18
Resolution	:	2.25 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 (i) 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 (i)) were used in the production of this report:

|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
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
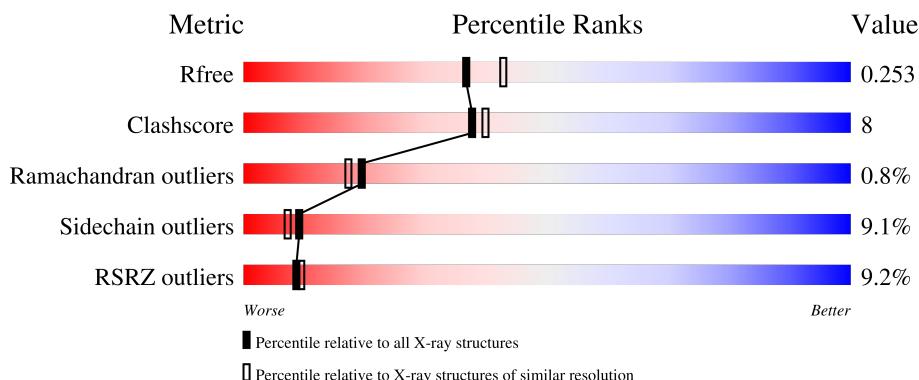
1 Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:
*X-RAY DIFFRACTION*
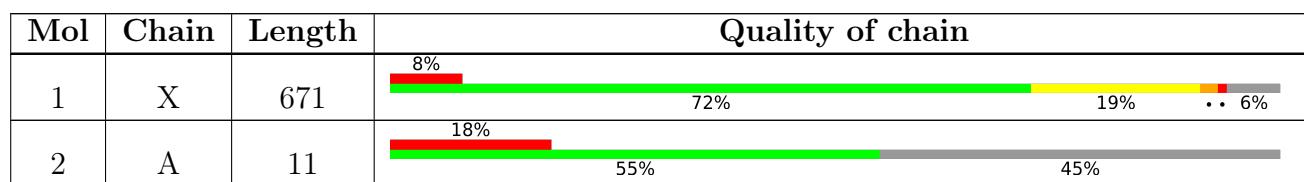
The reported resolution of this entry is 2.25 Å.

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		0.253
Clashscore		8
Ramachandran outliers		0.8%
Sidechain outliers		9.1%
RSRZ outliers		9.2%

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	1377 (2.26-2.26)
Clashscore	141614	1487 (2.26-2.26)
Ramachandran outliers	138981	1449 (2.26-2.26)
Sidechain outliers	138945	1450 (2.26-2.26)
RSRZ outliers	127900	1356 (2.26-2.26)

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	X	671	8% 72% 19% •• 6%
2	A	11	18% 55% 45%

2 Entry composition ⓘ

There are 5 unique types of molecules in this entry. The entry contains 5154 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 Protein-arginine deiminase type IV.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	X	628	Total 4943	C 3156	N 829	O 923	S 35	0	0	0

There are 9 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
X	-7	GLY	-	cloning artifact	UNP Q9UM07
X	-6	PRO	-	cloning artifact	UNP Q9UM07
X	-5	LEU	-	cloning artifact	UNP Q9UM07
X	-4	GLY	-	cloning artifact	UNP Q9UM07
X	-3	SER	-	cloning artifact	UNP Q9UM07
X	-2	PRO	-	cloning artifact	UNP Q9UM07
X	-1	GLU	-	cloning artifact	UNP Q9UM07
X	0	PHE	-	cloning artifact	UNP Q9UM07
X	645	ALA	CYS	engineered mutation	UNP Q9UM07
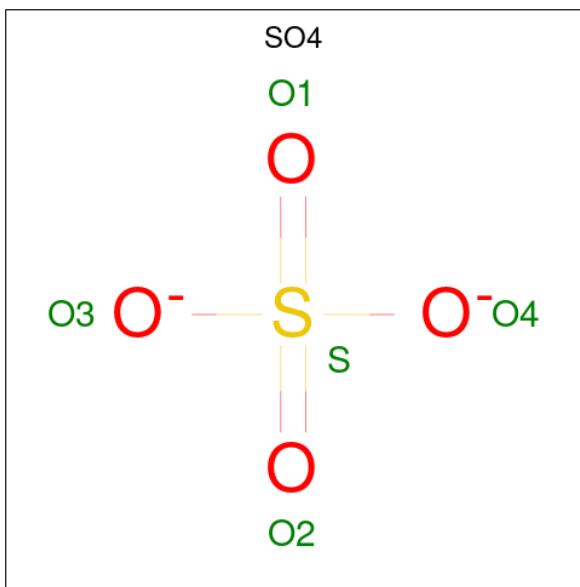
- Molecule 2 is a protein called 10-mer peptide from histone H4.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
2	A	6	Total 37	C 21	N 9	O 7	0	0	0

- Molecule 3 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	X	5	Total 5	Ca 5	0	0

- Molecule 4 is SULFATE ION (three-letter code: SO4) (formula: O_4S).

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	X	1	Total 5	O 4	S 1	0	0
4	X	1	Total 5	O 4	S 1	0	0
4	X	1	Total 5	O 4	S 1	0	0
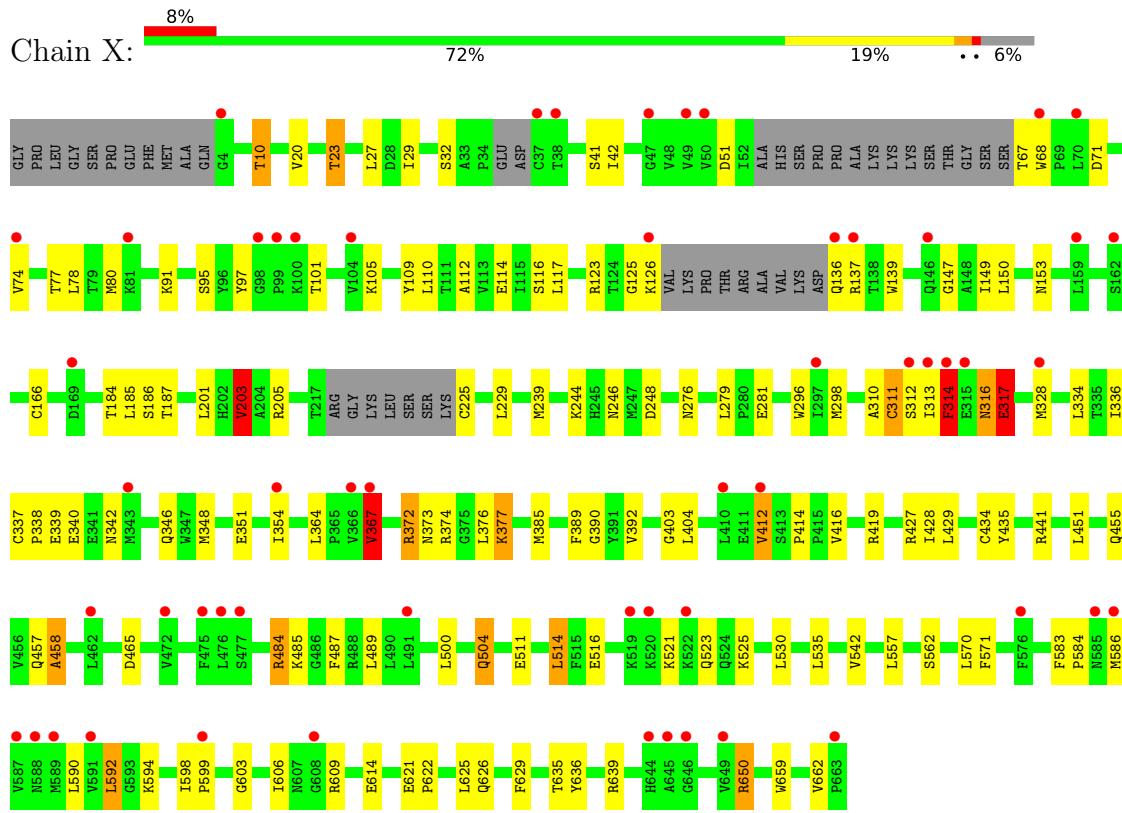
- Molecule 5 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	X	154	Total 154	O 154	0	0
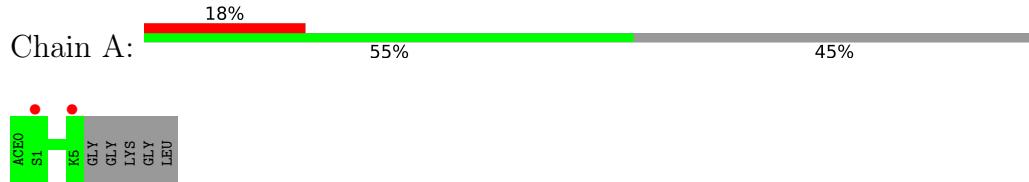
3 Residue-property plots ⓘ

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: Protein-arginine deiminase type IV

• Molecule 2: 10-mer peptide from histone H4

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	146.19Å 60.61Å 115.20Å 90.00° 124.18° 90.00°	Depositor
Resolution (Å)	33.57 – 2.25 33.57 – 2.25	Depositor EDS
% Data completeness (in resolution range)	98.3 (33.57-2.25) 98.3 (33.57-2.25)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	4.49 (at 2.24Å)	Xtriage
Refinement program	REFMAC 5.2.0005	Depositor
R, R_{free}	0.199 , 0.248 0.206 , 0.253	Depositor DCC
R_{free} test set	3918 reflections (9.98%)	wwPDB-VP
Wilson B-factor (Å^2)	50.2	Xtriage
Anisotropy	0.021	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 54.8	EDS
L-test for twinning[2]	$< |L| > = 0.49, < L^2 > = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	5154	wwPDB-VP
Average B, all atoms (Å^2)	59.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.65% of the height of the origin peak. No significant pseudotranslation is detected.*

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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: CA, SO4, ACE

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	X	0.69	1/5062 (0.0%)	0.83	11/6869 (0.2%)
2	A	0.63	0/34	0.66	0/42
All	All	0.69	1/5096 (0.0%)	0.83	11/6911 (0.2%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	X	311	CYS	CB-SG	-6.57	1.71	1.82

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	X	650	ARG	NE-CZ-NH2	-7.69	116.46	120.30
1	X	203	VAL	CB-CA-C	-7.62	96.91	111.40
1	X	412	VAL	CB-CA-C	-7.36	97.42	111.40
1	X	650	ARG	NE-CZ-NH1	6.91	123.75	120.30
1	X	372	ARG	NE-CZ-NH1	6.22	123.41	120.30
1	X	455	GLN	CB-CA-C	-6.20	98.01	110.40
1	X	205	ARG	NE-CZ-NH2	-5.98	117.31	120.30
1	X	367	VAL	CB-CA-C	-5.89	100.21	111.40
1	X	311	CYS	N-CA-C	-5.83	95.26	111.00
1	X	392	VAL	CB-CA-C	-5.59	100.78	111.40
1	X	314	PHE	CB-CA-C	5.10	120.61	110.40

There are no chirality outliers.

There are no planarity outliers.

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	X	4943	0	4905	77	1
2	A	37	0	40	0	0
3	X	5	0	0	0	0
4	X	15	0	0	1	0
5	X	154	0	0	6	1
All	All	5154	0	4945	77	2

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 (77) 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:X:67:THR:N	1:X:97:TYR:HH	1.67	0.91
1:X:312:SER:HB2	1:X:316:ASN:HD21	1.44	0.79
1:X:312:SER:CB	1:X:316:ASN:HD21	2.03	0.71
1:X:311:CYS:SG	1:X:311:CYS:O	2.50	0.69
1:X:20:VAL:O	1:X:23:THR:HB	1.93	0.69
1:X:354:ILE:HG21	1:X:650:ARG:HG3	1.77	0.65
1:X:662:VAL:O	1:X:662:VAL:HG23	2.00	0.62
1:X:313:ILE:O	1:X:342:ASN:ND2	2.33	0.61
1:X:314:PHE:HE2	1:X:316:ASN:HD22	1.49	0.60
1:X:310:ALA:O	1:X:336:ILE:HA	2.01	0.60
1:X:334:LEU:HD11	1:X:336:ILE:CD1	2.34	0.58
1:X:504:GLN:HG3	1:X:606:ILE:CD1	2.36	0.56
1:X:311:CYS:CB	1:X:337:CYS:HB3	2.35	0.55
1:X:91:LYS:NZ	1:X:109:TYR:CE2	2.74	0.55
1:X:334:LEU:HD11	1:X:336:ILE:HD12	1.87	0.55
1:X:434:CYS:HB2	5:X:963:HOH:O	2.06	0.55
1:X:340:GLU:OE2	5:X:998:HOH:O	2.18	0.55
1:X:504:GLN:HG3	1:X:606:ILE:HD13	1.89	0.54
1:X:153:ASN:HB3	1:X:166:CYS:HB3	1.89	0.54
1:X:374:ARG:O	1:X:377:LYS:HD3	2.08	0.54
1:X:484:ARG:NH1	1:X:562:SER:OG	2.41	0.54
1:X:311:CYS:HB2	1:X:337:CYS:HB3	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:X:74:VAL:HG13	1:X:74:VAL:O	2.08	0.53
1:X:80:MET:HE2	1:X:112:ALA:HB2	1.92	0.52
1:X:485:LYS:HB2	5:X:923:HOH:O	2.09	0.52
1:X:403:GLY:N	4:X:905:SO4:O3	2.36	0.52
1:X:428:ILE:HD13	1:X:451:LEU:HD22	1.92	0.52
1:X:313:ILE:HB	1:X:338:PRO:HA	1.91	0.51
1:X:316:ASN:OD1	1:X:316:ASN:C	2.49	0.51
1:X:586:MET:HA	1:X:599:PRO:HG2	1.92	0.51
1:X:311:CYS:HB3	1:X:348:MET:CE	2.41	0.50
1:X:80:MET:CE	1:X:112:ALA:HB2	2.41	0.50
1:X:511:GLU:OE1	1:X:525:LYS:NZ	2.39	0.50
1:X:91:LYS:NZ	1:X:91:LYS:HB2	2.28	0.48
1:X:184:THR:HG22	1:X:248:ASP:OD2	2.13	0.48
1:X:91:LYS:HZ1	1:X:109:TYR:HE2	1.59	0.47
1:X:635:THR:HG23	1:X:636:TYR:HD1	1.78	0.47
1:X:351:GLU:HG2	1:X:372:ARG:HE	1.79	0.47
1:X:41:SER:HG	1:X:67:THR:N	2.13	0.47
1:X:354:ILE:HD13	1:X:367:VAL:HG13	1.97	0.47
1:X:10:THR:HG22	1:X:32:SER:HB3	1.97	0.47
1:X:441:ARG:NH1	1:X:465:ASP:OD2	2.48	0.46
1:X:123:ARG:HD3	1:X:659:TRP:CD1	2.51	0.46
1:X:203:VAL:HG22	1:X:229:LEU:HD13	1.96	0.46
1:X:67:THR:N	1:X:97:TYR:OH	2.40	0.45
1:X:311:CYS:HB2	1:X:342:ASN:OD1	2.15	0.45
1:X:583:PHE:O	1:X:584:PRO:C	2.54	0.45
1:X:203:VAL:CG2	1:X:229:LEU:HD13	2.47	0.45
1:X:29:ILE:HD11	1:X:42:ILE:HD11	1.98	0.44
1:X:225:CYS:N	5:X:1025:HOH:O	2.50	0.44
1:X:457:GLN:O	1:X:458:ALA:C	2.55	0.44
1:X:621:GLU:N	1:X:622:PRO:CD	2.80	0.43
1:X:354:ILE:CD1	1:X:367:VAL:HG13	2.48	0.43
1:X:51:ASP:HB3	1:X:77:THR:HG23	2.01	0.43
1:X:598:ILE:O	1:X:629:PHE:HA	2.19	0.43
1:X:125:GLY:HA2	5:X:995:HOH:O	2.19	0.43
1:X:311:CYS:HB3	1:X:348:MET:HE2	2.00	0.43
1:X:316:ASN:OD1	1:X:317:GLU:N	2.52	0.42
1:X:296:TRP:CH2	1:X:298:MET:HG2	2.54	0.42
1:X:351:GLU:OE2	1:X:373:ASN:N	2.53	0.42
1:X:27:LEU:CD1	1:X:78:LEU:HD11	2.49	0.42
1:X:276:ASN:CB	1:X:279:LEU:HD12	2.50	0.42
1:X:296:TRP:CH2	1:X:298:MET:CG	3.03	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:X:91:LYS:HB2	1:X:91:LYS:HZ2	1.84	0.42
1:X:114:GLU:O	1:X:187:THR:HA	2.20	0.41
1:X:313:ILE:CB	1:X:338:PRO:HA	2.50	0.41
1:X:139:TRP:CD1	1:X:147:GLY:HA3	2.55	0.41
1:X:414:PRO:HG2	1:X:487:PHE:CG	2.55	0.41
1:X:542:VAL:HG11	1:X:571:PHE:CD1	2.55	0.41
1:X:626:GLN:HB2	5:X:1005:HOH:O	2.21	0.41
1:X:514:LEU:HD23	1:X:603:GLY:HA2	2.03	0.41
1:X:186:SER:OG	1:X:246:ASN:ND2	2.54	0.41
1:X:339:GLU:HA	1:X:342:ASN:HB2	2.02	0.41
1:X:590:LEU:HG	1:X:592:LEU:HD13	2.03	0.40
1:X:123:ARG:HG2	1:X:149:ILE:CD1	2.51	0.40
1:X:337:CYS:HA	1:X:338:PRO:HD3	1.88	0.40
1:X:367:VAL:HG23	1:X:390:GLY:O	2.22	0.40

All (2) 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)
5:X:1060:HOH:O	5:X:1060:HOH:O[2_656]	2.10	0.10
1:X:281:GLU:OE1	1:X:435:TYR:OH[2_555]	2.15	0.05

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	X	618/671 (92%)	586 (95%)	27 (4%)	5 (1%)	19	17
2	A	4/11 (36%)	4 (100%)	0	0	100	100
All	All	622/682 (91%)	590 (95%)	27 (4%)	5 (1%)	19	17

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	X	484	ARG
1	X	137	ARG
1	X	419	ARG
1	X	317	GLU
1	X	458	ALA

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	X	558/593 (94%)	507 (91%)	51 (9%)	9	7
2	A	3/5 (60%)	3 (100%)	0	100	100
All	All	561/598 (94%)	510 (91%)	51 (9%)	9	7

All (51) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	X	10	THR
1	X	23	THR
1	X	68	TRP
1	X	71	ASP
1	X	95	SER
1	X	101	THR
1	X	105	LYS
1	X	110	LEU
1	X	116	SER
1	X	117	LEU
1	X	126	LYS
1	X	136	GLN
1	X	150	LEU
1	X	185	LEU
1	X	201	LEU
1	X	203	VAL
1	X	239	MET
1	X	244	LYS
1	X	314	PHE

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Mol	Chain	Res	Type
1	X	316	ASN
1	X	317	GLU
1	X	328	MET
1	X	346	GLN
1	X	364	LEU
1	X	367	VAL
1	X	376	LEU
1	X	377	LYS
1	X	385	MET
1	X	389	PHE
1	X	404	LEU
1	X	412	VAL
1	X	416	VAL
1	X	427	ARG
1	X	429	LEU
1	X	489	LEU
1	X	500	LEU
1	X	504	GLN
1	X	514	LEU
1	X	516	GLU
1	X	521	LYS
1	X	523	GLN
1	X	530	LEU
1	X	535	LEU
1	X	557	LEU
1	X	570	LEU
1	X	592	LEU
1	X	594	LYS
1	X	609	ARG
1	X	614	GLU
1	X	625	LEU
1	X	639	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (6) such sidechains are listed below:

Mol	Chain	Res	Type
1	X	178	GLN
1	X	246	ASN
1	X	448	GLN
1	X	505	GLN
1	X	523	GLN
1	X	595	HIS

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 8 ligands modelled in this entry, 5 are monoatomic - leaving 3 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#|Z| > 2$	Counts	RMSZ	$\#|Z| > 2$
4	SO4	X	907	-	4,4,4	0.14	0	6,6,6	0.35	0
4	SO4	X	906	-	4,4,4	0.17	0	6,6,6	0.24	0
4	SO4	X	905	-	4,4,4	0.21	0	6,6,6	0.30	0

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.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	X	905	SO4	1	0

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	X	628/671 (93%)	0.40	56 (8%)	9	10	45, 57, 76, 93	0
2	A	5/11 (45%)	2.09	2 (40%)	0	0	59, 62, 66, 74	0
All	All	633/682 (92%)	0.41	58 (9%)	9	9	45, 57, 76, 93	0

All (58) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	X	312	SER	5.8
2	A	1	SER	4.9
1	X	587	VAL	4.7
1	X	314	PHE	4.5
1	X	126	LYS	4.4
1	X	38	THR	3.8
1	X	104	VAL	3.7
1	X	476	LEU	3.6
1	X	98	GLY	3.6
1	X	74	VAL	3.4
2	A	5	LYS	3.4
1	X	491	LEU	3.4
1	X	4	GLY	3.4
1	X	588	ASN	3.3
1	X	49	VAL	3.1
1	X	644	HIS	3.0
1	X	520	LYS	3.0
1	X	162	SER	3.0
1	X	50	VAL	2.9
1	X	519	LYS	2.9
1	X	366	VAL	2.9
1	X	159	LEU	2.9
1	X	136	GLN	2.8
1	X	585	ASN	2.8

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Mol	Chain	Res	Type	RSRZ
1	X	586	MET	2.7
1	X	313	ILE	2.7
1	X	328	MET	2.6
1	X	137	ARG	2.5
1	X	81	LYS	2.4
1	X	477	SER	2.4
1	X	343	MET	2.4
1	X	146	GLN	2.4
1	X	68	TRP	2.4
1	X	475	PHE	2.3
1	X	645	ALA	2.3
1	X	354	ILE	2.3
1	X	47	GLY	2.3
1	X	472	VAL	2.3
1	X	576	PHE	2.3
1	X	367	VAL	2.2
1	X	646	GLY	2.2
1	X	522	LYS	2.2
1	X	99	PRO	2.2
1	X	663	PRO	2.2
1	X	410	LEU	2.2
1	X	589	MET	2.2
1	X	169	ASP	2.2
1	X	297	ILE	2.1
1	X	100	LYS	2.1
1	X	462	LEU	2.1
1	X	412	VAL	2.1
1	X	591	VAL	2.1
1	X	649	VAL	2.1
1	X	608	GLY	2.1
1	X	70	LEU	2.1
1	X	37	CYS	2.1
1	X	599	PRO	2.1
1	X	315	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 ⓘ

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	SO4	X	905	5/5	0.89	0.24	122,122,123,123	0
4	SO4	X	907	5/5	0.94	0.20	83,83,84,85	0
4	SO4	X	906	5/5	0.95	0.16	99,100,100,101	0
3	CA	X	904	1/1	0.96	0.12	58,58,58,58	0
3	CA	X	902	1/1	0.97	0.10	65,65,65,65	0
3	CA	X	903	1/1	0.97	0.10	52,52,52,52	0
3	CA	X	901	1/1	0.97	0.10	56,56,56,56	0
3	CA	X	900	1/1	0.99	0.09	48,48,48,48	0

6.5 Other polymers ⓘ

There are no such residues in this entry.