WORLDWIDE PDB
PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report (i)

Oct 2, 2024 – 04:42 pm BST

PDB ID	:	8R2L
Title	:	Crystal structure of the ectodomain of TBEV E protein (Sofjin strain)
Authors	:	Vlaskina, A.V.; Samygina, V.R.
Deposited on	:	2023-11-06
Resolution	:	3.20 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	:	3.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.003 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.39

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 3.20 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 — 0.279
Clashscore — 22
Ramachandran outliers — 8.7%
Sidechain outliers — 19.3%
RSRZ outliers — 0

Worse *Better*

▮ Percentile relative to all X-ray structures
▯ Percentile relative to X-ray structures of similar resolution
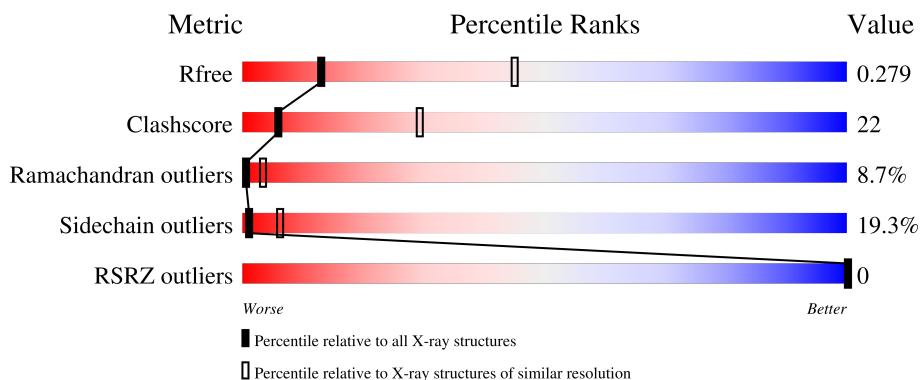
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	164625	1370 (3.20-3.20)
Clashscore	180529	1497 (3.20-3.20)
Ramachandran outliers	177936	1479 (3.20-3.20)
Sidechain outliers	177891	1478 (3.20-3.20)
RSRZ outliers	164620	1371 (3.20-3.20)

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	AAA	395	46% 42% 10% ·
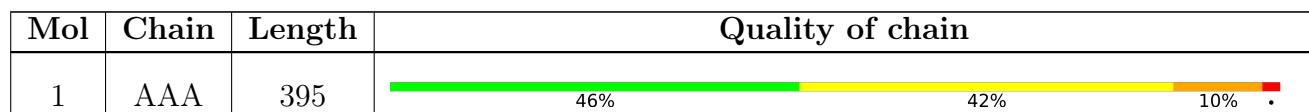
2 Entry composition ⓘ

There are 2 unique types of molecules in this entry. The entry contains 3036 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 Envelope protein E.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	AAA	394	3028	1897	534	575	22	0	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
AAA	1	MET	-	initiating methionine	UNP P07720

- Molecule 2 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	O		
2	AAA	8	8	8	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: Envelope protein E

Chain AAA:
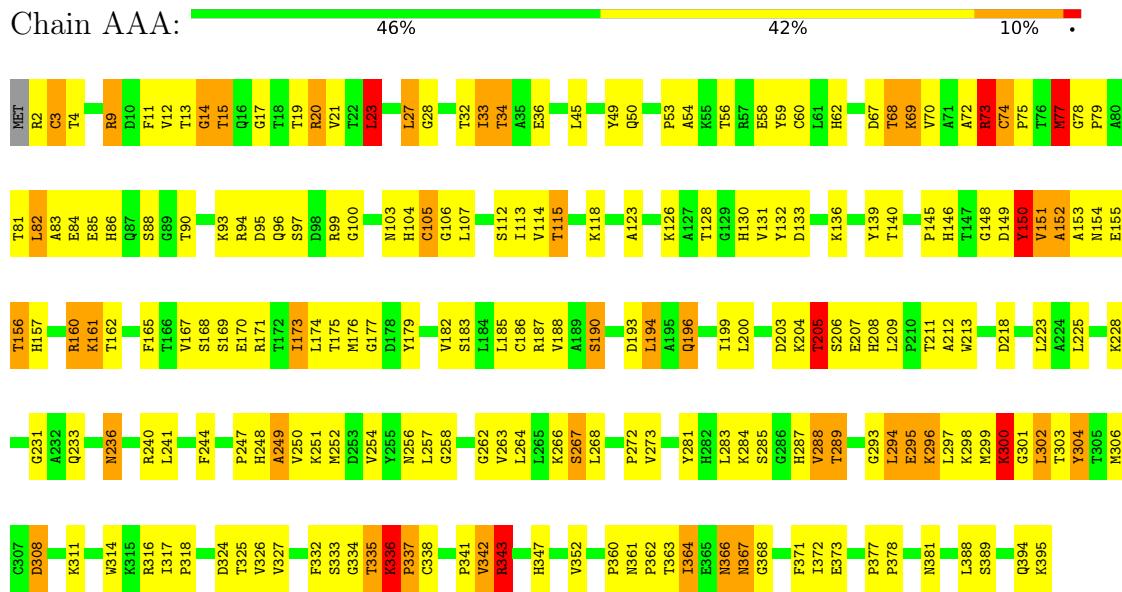
4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 41 3 2	Depositor
Cell constants a, b, c, α, β, γ	165.06Å　　165.06Å　　165.06Å 90.00°　　90.00°　　90.00°	Depositor
Resolution (Å)	15.00　–　3.20 15.00　–　3.20	Depositor EDS
% Data completeness (in resolution range)	98.7 (15.00-3.20) 98.7 (15.00-3.20)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.43 (at 3.19Å)	Xtriage
Refinement program	REFMAC 5.8.0257	Depositor
R, R_{free}	0.202　,　0.286 0.205　,　0.279	Depositor DCC
R_{free} test set	650 reflections (4.98%)	wwPDB-VP
Wilson B-factor (Å^2)	112.4	Xtriage
Anisotropy	0.000	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.29 , 76.7	EDS
L-test for twinning[2]	$< |L| > = 0.50$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	3036	wwPDB-VP
Average B, all atoms (Å^2)	120.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.75% 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 ⓘ

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	AAA	0.96	4/3096 (0.1%)	1.29	11/4204 (0.3%)

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	AAA	0	12

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	AAA	205	THR	C-O	5.82	1.34	1.23
1	AAA	257	LEU	C-O	5.69	1.34	1.23
1	AAA	352	VAL	C-O	5.32	1.33	1.23
1	AAA	262	GLY	C-O	5.23	1.32	1.23

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	AAA	73	ARG	NE-CZ-NH1	8.93	124.77	120.30
1	AAA	150	TYR	CB-CA-C	7.43	125.27	110.40
1	AAA	304	TYR	CB-CA-C	-6.57	97.26	110.40
1	AAA	289	THR	CA-CB-OG1	-6.51	95.33	109.00
1	AAA	150	TYR	CA-CB-CG	6.21	125.19	113.40
1	AAA	4	THR	CA-CB-OG1	6.09	121.80	109.00
1	AAA	161	LYS	CB-CA-C	5.56	121.51	110.40
1	AAA	9	ARG	NE-CZ-NH1	5.46	123.03	120.30
1	AAA	303	THR	CB-CA-C	5.17	125.55	111.60
1	AAA	186	CYS	CB-CA-C	5.07	120.54	110.40
1	AAA	67	ASP	CB-CA-C	-5.02	100.36	110.40

There are no chirality outliers.

All (12) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	AAA	14	GLY	Peptide
1	AAA	152	ALA	Peptide
1	AAA	156	THR	Peptide
1	AAA	167	VAL	Peptide
1	AAA	17	GLY	Peptide
1	AAA	190	SER	Peptide
1	AAA	203	ASP	Peptide
1	AAA	23	LEU	Peptide
1	AAA	247	PRO	Peptide
1	AAA	28	GLY	Peptide
1	AAA	78	GLY	Peptide
1	AAA	81	THR	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	AAA	3028	0	2971	135	0
2	AAA	8	0	0	1	0
All	All	3036	0	2971	135	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 22.

All (135) 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:AAA:3:CYS:O	1:AAA:9:ARG:HD2	1.68	0.92
1:AAA:69:LYS:HB3	1:AAA:82:LEU:HD22	1.56	0.87
1:AAA:148:GLY:HA2	1:AAA:150:TYR:CD2	2.10	0.85
1:AAA:139:TYR:CE2	1:AAA:188:VAL:HG13	2.15	0.82
1:AAA:294:LEU:HB2	1:AAA:297:LEU:HD12	1.62	0.81
1:AAA:308:ASP:OD1	1:AAA:311:LYS:HG3	1.83	0.78
1:AAA:12:VAL:HG11	1:AAA:21:VAL:HG11	1.66	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AAA:151:VAL:HG12	1:AAA:152:ALA:H	1.50	0.76
1:AAA:294:LEU:HB2	1:AAA:297:LEU:CD1	2.18	0.73
1:AAA:314:TRP:CD1	1:AAA:388:LEU:HD11	2.27	0.70
1:AAA:151:VAL:HG11	1:AAA:155:GLU:OE2	1.94	0.68
1:AAA:2:ARG:O	1:AAA:3:CYS:SG	2.52	0.68
1:AAA:165:PHE:HD1	1:AAA:170:GLU:HA	1.56	0.67
1:AAA:75:PRO:HD2	1:AAA:105:CYS:SG	2.35	0.67
1:AAA:264:LEU:O	1:AAA:267:SER:HB2	1.95	0.67
1:AAA:248:HIS:ND1	1:AAA:249:ALA:N	2.44	0.64
1:AAA:336:LYS:CB	1:AAA:337:PRO:CD	2.75	0.64
1:AAA:336:LYS:HB3	1:AAA:337:PRO:CD	2.27	0.64
1:AAA:97:SER:HB2	1:AAA:249:ALA:O	1.98	0.64
1:AAA:12:VAL:HG11	1:AAA:21:VAL:CG1	2.29	0.62
1:AAA:74:CYS:HB2	1:AAA:77:MET:HG2	1.81	0.62
1:AAA:100:GLY:H	1:AAA:103:ASN:ND2	1.98	0.61
1:AAA:161:LYS:HD3	2:AAA:406:HOH:O	2.00	0.61
1:AAA:100:GLY:O	1:AAA:105:CYS:HB3	2.01	0.61
1:AAA:236:ASN:N	1:AAA:236:ASN:OD1	2.34	0.61
1:AAA:302:LEU:H	1:AAA:302:LEU:HD12	1.66	0.61
1:AAA:100:GLY:H	1:AAA:103:ASN:HD21	1.49	0.60
1:AAA:74:CYS:CB	1:AAA:77:MET:HG2	2.32	0.60
1:AAA:75:PRO:CD	1:AAA:105:CYS:SG	2.90	0.60
1:AAA:13:THR:HA	1:AAA:34:THR:O	2.02	0.60
1:AAA:115:THR:HG21	1:AAA:252:MET:HB3	1.84	0.59
1:AAA:314:TRP:NE1	1:AAA:388:LEU:HD11	2.19	0.58
1:AAA:332:PHE:HB3	1:AAA:364:ILE:HD13	1.85	0.58
1:AAA:179:TYR:O	1:AAA:298:LYS:N	2.35	0.57
1:AAA:366:ASN:O	1:AAA:368:GLY:N	2.38	0.57
1:AAA:285:SER:O	1:AAA:285:SER:OG	2.21	0.56
1:AAA:115:THR:CG2	1:AAA:252:MET:HB3	2.36	0.56
1:AAA:316:ARG:HH11	1:AAA:316:ARG:HG2	1.71	0.56
1:AAA:90:THR:HG22	1:AAA:118:LYS:HD3	1.87	0.56
1:AAA:244:PHE:CE2	1:AAA:254:VAL:HG22	2.41	0.56
1:AAA:327:VAL:HA	1:AAA:372:ILE:O	2.06	0.56
1:AAA:49:TYR:HB2	1:AAA:281:TYR:O	2.05	0.55
1:AAA:196:GLN:HE21	1:AAA:196:GLN:HA	1.71	0.55
1:AAA:336:LYS:HB2	1:AAA:337:PRO:HD2	1.88	0.55
1:AAA:73:ARG:NH1	1:AAA:77:MET:HG3	2.21	0.55
1:AAA:225:LEU:N	1:AAA:240:ARG:HH11	2.05	0.55
1:AAA:225:LEU:N	1:AAA:240:ARG:NH1	2.54	0.55
1:AAA:360:PRO:O	1:AAA:362:PRO:HD3	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AAA:205:THR:O	1:AAA:207:GLU:N	2.39	0.55
1:AAA:366:ASN:O	1:AAA:367:ASN:C	2.46	0.54
1:AAA:139:TYR:CE2	1:AAA:188:VAL:CG1	2.90	0.54
1:AAA:90:THR:CG2	1:AAA:118:LYS:HD3	2.39	0.53
1:AAA:183:SER:OG	1:AAA:293:GLY:HA3	2.08	0.53
1:AAA:145:PRO:HD3	1:AAA:176:MET:CE	2.37	0.53
1:AAA:311:LYS:CE	1:AAA:334:GLY:HA3	2.39	0.53
1:AAA:336:LYS:CB	1:AAA:337:PRO:HD2	2.39	0.53
1:AAA:190:SER:HB3	1:AAA:194:LEU:HD11	1.90	0.53
1:AAA:378:PRO:HA	1:AAA:394:GLN:HB3	1.91	0.52
1:AAA:133:ASP:OD2	1:AAA:136:LYS:HE3	2.10	0.52
1:AAA:185:LEU:HD23	1:AAA:185:LEU:C	2.30	0.52
1:AAA:115:THR:HG23	1:AAA:252:MET:CE	2.39	0.52
1:AAA:83:ALA:O	1:AAA:86:HIS:HB2	2.10	0.52
1:AAA:256:ASN:C	1:AAA:258:GLY:H	2.12	0.52
1:AAA:300:LYS:O	1:AAA:300:LYS:HG3	2.10	0.52
1:AAA:99:ARG:HD2	1:AAA:103:ASN:OD1	2.10	0.51
1:AAA:173:ILE:N	1:AAA:173:ILE:HD13	2.25	0.51
1:AAA:332:PHE:CE2	1:AAA:334:GLY:O	2.64	0.51
1:AAA:336:LYS:HB3	1:AAA:337:PRO:HD3	1.93	0.51
1:AAA:287:HIS:C	1:AAA:287:HIS:CD2	2.84	0.50
1:AAA:308:ASP:OD2	1:AAA:308:ASP:C	2.50	0.50
1:AAA:58:GLU:OE1	1:AAA:126:LYS:HD3	2.11	0.50
1:AAA:342:VAL:C	1:AAA:343:ARG:HG2	2.32	0.50
1:AAA:250:VAL:HG23	1:AAA:251:LYS:HE3	1.94	0.50
1:AAA:148:GLY:HA2	1:AAA:150:TYR:HD2	1.74	0.49
1:AAA:148:GLY:C	1:AAA:150:TYR:N	2.65	0.49
1:AAA:213:TRP:CD2	1:AAA:268:LEU:HD13	2.48	0.49
1:AAA:33:ILE:HD13	1:AAA:33:ILE:O	2.12	0.48
1:AAA:148:GLY:C	1:AAA:150:TYR:H	2.16	0.48
1:AAA:14:GLY:C	1:AAA:15:THR:O	2.52	0.48
1:AAA:193:ASP:HB2	1:AAA:196:GLN:HB2	1.96	0.48
1:AAA:200:LEU:O	1:AAA:212:ALA:HA	2.14	0.48
1:AAA:72:ALA:HB2	1:AAA:113:ILE:HG13	1.95	0.48
1:AAA:132:TYR:CZ	1:AAA:283:LEU:HD23	2.49	0.47
1:AAA:146:HIS:O	1:AAA:146:HIS:CG	2.67	0.47
1:AAA:59:TYR:CD2	1:AAA:223:LEU:HD12	2.49	0.47
1:AAA:300:LYS:O	1:AAA:300:LYS:CG	2.62	0.47
1:AAA:59:TYR:CE2	1:AAA:223:LEU:HD12	2.49	0.47
1:AAA:311:LYS:HE2	1:AAA:334:GLY:HA3	1.97	0.47
1:AAA:132:TYR:CE2	1:AAA:199:ILE:HG12	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AAA:139:TYR:OH	1:AAA:190:SER:HA	2.14	0.47
1:AAA:244:PHE:CD2	1:AAA:254:VAL:HG22	2.51	0.46
1:AAA:70:VAL:HG22	1:AAA:115:THR:HB	1.98	0.46
1:AAA:193:ASP:O	1:AAA:196:GLN:N	2.49	0.46
1:AAA:50:GLN:HE21	1:AAA:53:PRO:HA	1.80	0.45
1:AAA:68:THR:O	1:AAA:69:LYS:HE3	2.16	0.45
1:AAA:250:VAL:CG2	1:AAA:251:LYS:HE3	2.46	0.45
1:AAA:154:ASN:OD1	1:AAA:154:ASN:O	2.35	0.45
1:AAA:11:PHE:CD1	1:AAA:32:THR:HB	2.51	0.45
1:AAA:213:TRP:CE2	1:AAA:268:LEU:HD13	2.51	0.45
1:AAA:317:ILE:O	1:AAA:318:PRO:C	2.54	0.45
1:AAA:75:PRO:HD3	1:AAA:105:CYS:SG	2.57	0.45
1:AAA:99:ARG:HA	1:AAA:103:ASN:OD1	2.17	0.45
1:AAA:326:VAL:O	1:AAA:373:GLU:HA	2.17	0.44
1:AAA:69:LYS:O	1:AAA:115:THR:HA	2.17	0.44
1:AAA:377:PRO:HG2	1:AAA:381:ASN:HD21	1.82	0.44
1:AAA:11:PHE:HA	1:AAA:32:THR:O	2.18	0.44
1:AAA:317:ILE:HG22	1:AAA:318:PRO:O	2.17	0.44
1:AAA:361:ASN:O	1:AAA:363:THR:HG23	2.17	0.44
1:AAA:19:THR:HB	1:AAA:295:GLU:HB3	1.99	0.44
1:AAA:212:ALA:O	1:AAA:273:VAL:HA	2.18	0.44
1:AAA:325:THR:OG1	1:AAA:373:GLU:OE2	2.33	0.43
1:AAA:27:LEU:HD12	1:AAA:27:LEU:HA	1.64	0.43
1:AAA:45:LEU:HD12	1:AAA:140:THR:O	2.18	0.43
1:AAA:161:LYS:HD2	1:AAA:174:LEU:HD22	2.00	0.43
1:AAA:132:TYR:HB2	1:AAA:194:LEU:HB3	2.01	0.43
1:AAA:294:LEU:HD22	1:AAA:294:LEU:H	1.83	0.43
1:AAA:150:TYR:O	1:AAA:151:VAL:HG23	2.19	0.43
1:AAA:20:ARG:HG2	1:AAA:21:VAL:N	2.32	0.42
1:AAA:151:VAL:HG12	1:AAA:152:ALA:N	2.25	0.42
1:AAA:263:VAL:O	1:AAA:266:LYS:HB3	2.19	0.42
1:AAA:132:TYR:HE2	1:AAA:199:ILE:HG12	1.84	0.42
1:AAA:99:ARG:HD2	1:AAA:99:ARG:HA	1.86	0.42
1:AAA:334:GLY:C	1:AAA:335:THR:O	2.58	0.42
1:AAA:53:PRO:HG3	1:AAA:281:TYR:CG	2.55	0.42
1:AAA:100:GLY:H	1:AAA:103:ASN:CG	2.23	0.41
1:AAA:93:LYS:O	1:AAA:114:VAL:HG23	2.20	0.41
1:AAA:97:SER:CB	1:AAA:249:ALA:O	2.68	0.41
1:AAA:49:TYR:CB	1:AAA:281:TYR:O	2.68	0.41
1:AAA:188:VAL:HA	1:AAA:288:VAL:CG2	2.51	0.41
1:AAA:60:CYS:SG	1:AAA:62:HIS:O	2.79	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AAA:165:PHE:CD1	1:AAA:170:GLU:HA	2.46	0.41
1:AAA:190:SER:CB	1:AAA:194:LEU:HD11	2.50	0.41
1:AAA:12:VAL:HG21	1:AAA:23:LEU:CD2	2.50	0.41
1:AAA:54:ALA:O	1:AAA:130:HIS:HA	2.21	0.40
1:AAA:332:PHE:CE2	1:AAA:338:CYS:SG	3.15	0.40

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	AAA	392/395 (99%)	309 (79%)	49 (12%)	34 (9%)	0	3

All (34) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	AAA	15	THR
1	AAA	77	MET
1	AAA	156	THR
1	AAA	169	SER
1	AAA	206	SER
1	AAA	295	GLU
1	AAA	296	LYS
1	AAA	324	ASP
1	AAA	336	LYS
1	AAA	347	HIS
1	AAA	112	SER
1	AAA	149	ASP
1	AAA	151	VAL
1	AAA	157	HIS
1	AAA	177	GLY
1	AAA	205	THR

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Mol	Chain	Res	Type
1	AAA	231	GLY
1	AAA	366	ASN
1	AAA	3	CYS
1	AAA	106	GLY
1	AAA	267	SER
1	AAA	300	LYS
1	AAA	367	ASN
1	AAA	123	ALA
1	AAA	153	ALA
1	AAA	160	ARG
1	AAA	249	ALA
1	AAA	306	MET
1	AAA	335	THR
1	AAA	204	LYS
1	AAA	343	ARG
1	AAA	337	PRO
1	AAA	301	GLY
1	AAA	341	PRO

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	AAA	331/332 (100%)	267 (81%)	64 (19%)	1	6

All (64) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	AAA	20	ARG
1	AAA	23	LEU
1	AAA	27	LEU
1	AAA	33	ILE
1	AAA	34	THR
1	AAA	36	GLU
1	AAA	56	THR
1	AAA	68	THR

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Mol	Chain	Res	Type
1	AAA	69	LYS
1	AAA	73	ARG
1	AAA	74	CYS
1	AAA	77	MET
1	AAA	79	PRO
1	AAA	82	LEU
1	AAA	84	GLU
1	AAA	85	GLU
1	AAA	88	SER
1	AAA	94	ARG
1	AAA	95	ASP
1	AAA	96	GLN
1	AAA	104	HIS
1	AAA	105	CYS
1	AAA	107	LEU
1	AAA	115	THR
1	AAA	128	THR
1	AAA	131	VAL
1	AAA	150	TYR
1	AAA	160	ARG
1	AAA	162	THR
1	AAA	168	SER
1	AAA	171	ARG
1	AAA	173	ILE
1	AAA	175	THR
1	AAA	182	VAL
1	AAA	187	ARG
1	AAA	194	LEU
1	AAA	196	GLN
1	AAA	208	HIS
1	AAA	209	LEU
1	AAA	211	THR
1	AAA	218	ASP
1	AAA	228	LYS
1	AAA	233	GLN
1	AAA	236	ASN
1	AAA	241	LEU
1	AAA	272	PRO
1	AAA	284	LYS
1	AAA	288	VAL
1	AAA	289	THR
1	AAA	294	LEU

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Mol	Chain	Res	Type
1	AAA	296	LYS
1	AAA	299	MET
1	AAA	300	LYS
1	AAA	302	LEU
1	AAA	304	TYR
1	AAA	308	ASP
1	AAA	333	SER
1	AAA	336	LYS
1	AAA	342	VAL
1	AAA	343	ARG
1	AAA	364	ILE
1	AAA	371	PHE
1	AAA	389	SER
1	AAA	395	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

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 (i)

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	AAA	394/395 (99%)	-0.68	0	100	100	74, 116, 179, 256	0

There are no RSRZ outliers to report.

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 ⓘ

There are no ligands in this entry.

6.5　Other polymers ⓘ

There are no such residues in this entry.