Full wwPDB EM Validation Report

Oct 15, 2025 – 12:11 PM JST

PDB ID	:	9M8Q / pdb_00009m8q
EMDB ID	:	EMD-63718
Title	:	CasRx-crRNA-target RNA ternary complex
Authors	:	Chen, X.Y.; Huang, H.D.
Deposited on	:	2025-03-12
Resolution	:	3.46 Å(reported)

This is a Full wwPDB EM 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/EMValidationReportHelp
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:

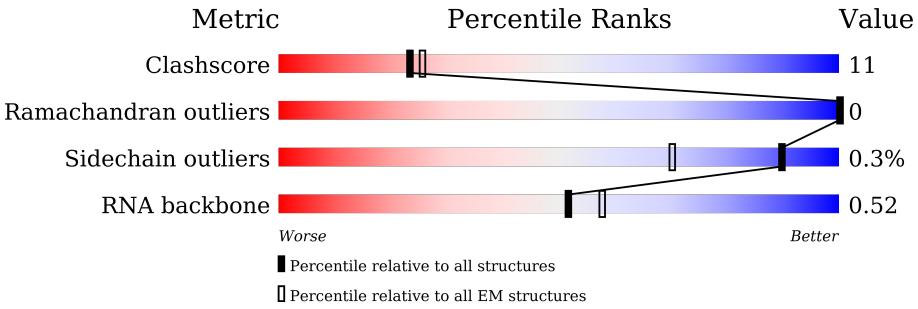
EMDB validation analysis	:	FAILED
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	NOT EXECUTED
MapQ	:	FAILED
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.46

1 Overall quality at a glance

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 3.46 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)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the 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%

Mol	Chain	Length	Quality of chain
1	A	967	72% 22% 7%
2	B	55	47% 45% . .
3	C	30	17% 67% 17%

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 9000 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, 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 CasRx.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	904	7303	4658	1240	1377	28	0	0

- Molecule 2 is a RNA chain called RNA (55-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	B	55	1165	523	213	375	54	0	0

- Molecule 3 is a RNA chain called RNA (30-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	C	25	531	236	88	182	25	0	0

- Molecule 4 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

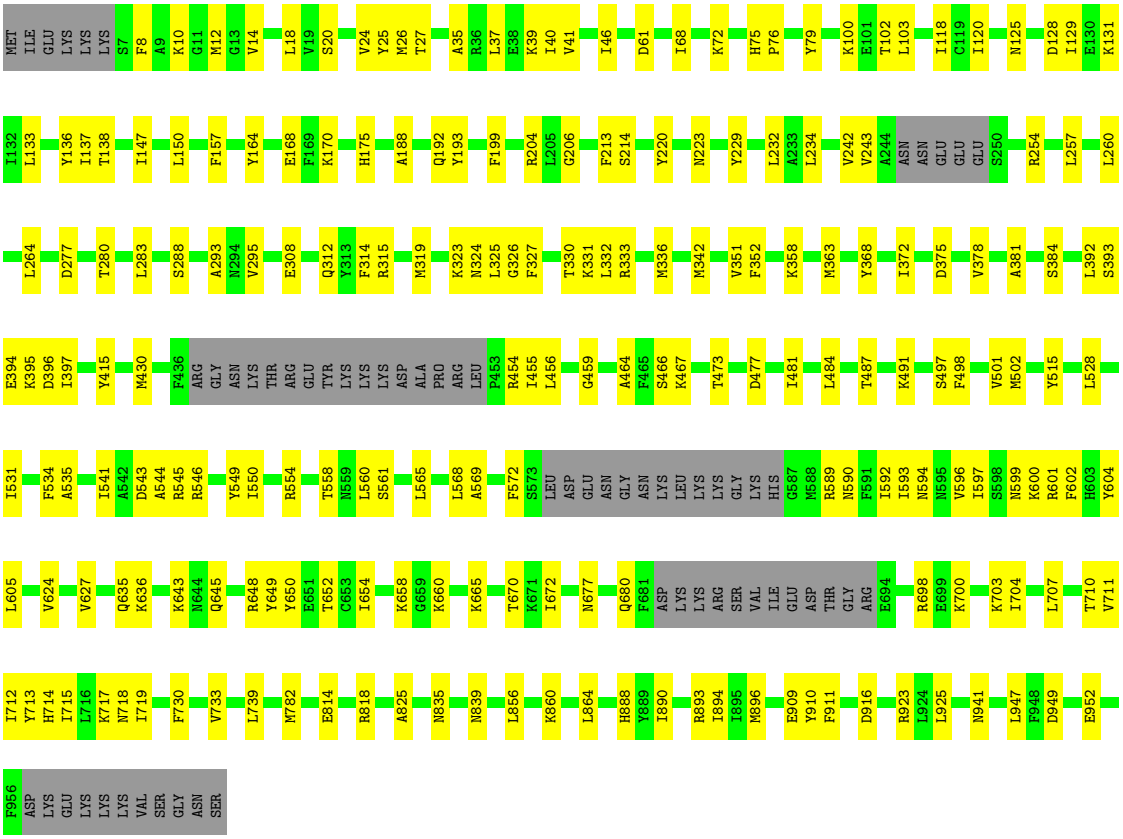
Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
4	B	1	1	1	0

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. 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. 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: CasRx

Chain A:

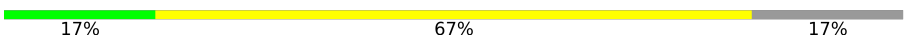


- Molecule 2: RNA (55-MER)

Chain B:

- Molecule 3: RNA (30-MER)

Chain C:




U
G
G3
G4
C5
G6
C7
U8
G9
U10
C11
A12
U13
G14
A15
U16
G17
U18
U19
C20
G21
G24
G25
C26
U27
U
C
C

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	37831	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor

5 Model quality

5.1 Standard geometry

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

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	0.19	0/7437	0.41	0/10012
2	B	0.23	0/1302	0.66	5/2026 (0.2%)
3	C	0.11	0/591	0.24	0/919
All	All	0.19	0/9330	0.45	5/12957 (0.0%)

There are no bond length outliers.

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	-1	C	O3'-P-O5'	18.29	131.44	104.00
2	B	-1	C	OP2-P-O3'	-11.46	73.63	108.00
2	B	2	C	P-O3'-C3'	-7.49	108.97	120.20
2	B	1	G	O5'-P-OP2	-7.26	86.22	108.00
2	B	-1	C	P-O3'-C3'	-7.19	109.42	120.20

There are no chirality outliers.

There are no planarity outliers.

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	7303	0	7220	146	0
2	B	1165	0	599	27	0
3	C	531	0	267	25	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	B	1	0	0	0	0
All	All	9000	0	8086	180	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 11.

All (180) 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:592:ILE:O	1:A:596:VAL:HB	1.78	0.83
1:A:100:LYS:HG3	1:A:120:ILE:HG21	1.62	0.81
1:A:308:GLU:HG2	1:A:312:GLN:HE22	1.47	0.78
1:A:627:VAL:HG21	1:A:711:VAL:HG13	1.68	0.75
1:A:590:ASN:OD1	1:A:594:ASN:ND2	2.23	0.71
1:A:378:VAL:HG11	1:A:393:SER:HB3	1.71	0.71
1:A:138:THR:HG23	1:A:864:LEU:HD11	1.72	0.70
1:A:24:VAL:HB	1:A:41:VAL:HB	1.73	0.70
1:A:254:ARG:NH1	1:A:515:TYR:OH	2.25	0.70
1:A:856:LEU:HB3	1:A:860:LYS:HE2	1.73	0.70
1:A:26:MET:HB2	1:A:39:LYS:HB3	1.72	0.69
1:A:652:THR:OG1	1:A:703:LYS:NZ	2.25	0.69
1:A:680:GLN:HB3	1:A:698:ARG:HD3	1.74	0.69
1:A:333:ARG:NH2	3:C:14:G:OP1	2.26	0.69
1:A:283:LEU:HD11	1:A:534:PHE:HB3	1.74	0.68
2:B:13:C:H42	3:C:14:G:H1	1.41	0.68
1:A:8:PHE:O	1:A:12:MET:HB2	1.95	0.66
2:B:22:G:H1	3:C:5:C:H42	1.40	0.66
1:A:896:MET:HE1	1:A:911:PHE:HB3	1.78	0.66
1:A:715:ILE:O	1:A:719:ILE:HG12	1.95	0.65
1:A:599:ASN:HB2	1:A:602:PHE:HB2	1.77	0.64
1:A:351:VAL:HG23	1:A:352:PHE:HD1	1.62	0.64
1:A:257:LEU:HD12	1:A:260:LEU:HD11	1.81	0.63
1:A:72:LYS:NZ	3:C:27:U:OP2	2.31	0.63
3:C:14:G:H2'	3:C:15:A:H8	1.64	0.63
1:A:137:ILE:HD13	1:A:242:VAL:HG21	1.80	0.62
1:A:572:PHE:O	1:A:589:ARG:NH1	2.32	0.62
1:A:672:ILE:HG22	1:A:704:ILE:HG21	1.80	0.62
1:A:896:MET:HE1	1:A:911:PHE:O	2.01	0.61
1:A:164:TYR:O	1:A:229:TYR:OH	2.17	0.60
1:A:541:ILE:HG12	1:A:543:ASP:H	1.67	0.59
2:B:13:C:N4	3:C:14:G:H1	2.01	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:-27:C:N3	2:B:-9:G:N2	2.51	0.57
2:B:3:C:H2'	2:B:4:A:C8	2.39	0.57
1:A:498:PHE:O	1:A:502:MET:HG3	2.05	0.57
1:A:332:LEU:HD12	1:A:415:TYR:OH	2.05	0.57
3:C:16:U:H2'	3:C:17:G:H8	1.69	0.57
1:A:323:LYS:NZ	1:A:368:TYR:OH	2.38	0.56
2:B:3:C:H2'	2:B:4:A:O4'	2.05	0.56
1:A:531:ILE:O	1:A:535:ALA:N	2.39	0.56
1:A:288:SER:HA	1:A:295:VAL:HG21	1.87	0.55
2:B:6:C:H2'	2:B:7:G:C8	2.41	0.55
3:C:8:U:H2'	3:C:9:G:H8	1.71	0.55
3:C:11:C:H2'	3:C:12:A:H8	1.71	0.55
1:A:649:TYR:HA	1:A:652:THR:HG22	1.88	0.55
1:A:677:ASN:HB2	1:A:680:GLN:HE22	1.71	0.55
1:A:308:GLU:CG	1:A:312:GLN:HE22	2.17	0.54
1:A:549:TYR:CE1	1:A:597:ILE:HD12	2.42	0.54
1:A:220:TYR:HB2	1:A:541:ILE:HD11	1.89	0.54
1:A:703:LYS:NZ	3:C:7:C:H4'	2.23	0.54
1:A:825:ALA:HA	1:A:839:ASN:HD22	1.71	0.54
1:A:102:THR:HG23	1:A:103:LEU:HD12	1.89	0.53
1:A:234:LEU:HD21	1:A:264:LEU:HD21	1.89	0.53
2:B:2:C:N3	3:C:26:C:N4	2.48	0.53
2:B:7:G:O6	3:C:21:G:N1	2.41	0.53
1:A:658:LYS:HB3	1:A:660:LYS:NZ	2.23	0.53
1:A:103:LEU:HD11	1:A:739:LEU:HD13	1.90	0.53
2:B:8:A:H2'	2:B:9:A:C8	2.44	0.53
2:B:22:G:H1	3:C:5:C:N4	2.05	0.53
1:A:14:VAL:HG21	1:A:68:ILE:HD13	1.91	0.53
3:C:18:U:H2'	3:C:19:U:C6	2.44	0.53
1:A:893:ARG:O	1:A:896:MET:HB2	2.09	0.53
1:A:600:LYS:NZ	2:B:10:C:OP1	2.43	0.52
1:A:314:PHE:HD2	1:A:455:ILE:HD12	1.75	0.52
1:A:394:GLU:HA	1:A:397:ILE:HG22	1.92	0.52
2:B:3:C:H2'	2:B:4:A:H8	1.74	0.52
1:A:280:THR:HG23	1:A:456:LEU:HD13	1.92	0.52
1:A:589:ARG:O	1:A:593:ILE:HD12	2.08	0.52
1:A:713:TYR:CZ	1:A:717:LYS:HE2	2.45	0.52
2:B:15:U:N3	2:B:16:G:O6	2.43	0.52
1:A:332:LEU:N	1:A:415:TYR:OH	2.43	0.51
1:A:941:ASN:ND2	1:A:947:LEU:O	2.41	0.51
1:A:128:ASP:HA	1:A:131:LYS:HG2	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:326:GLY:O	2:B:4:A:O2'	2.25	0.51
1:A:814:GLU:O	1:A:818:ARG:HG3	2.10	0.51
1:A:896:MET:CE	1:A:911:PHE:HB3	2.41	0.51
1:A:454:ARG:NH1	1:A:456:LEU:O	2.44	0.50
2:B:6:C:H2'	2:B:7:G:H8	1.75	0.50
2:B:8:A:H61	3:C:20:C:H42	1.60	0.50
1:A:546:ARG:HH11	1:A:546:ARG:HG3	1.76	0.50
1:A:825:ALA:HA	1:A:839:ASN:ND2	2.27	0.50
1:A:39:LYS:NZ	1:A:46:ILE:HG23	2.27	0.50
1:A:375:ASP:OD2	1:A:395:LYS:NZ	2.29	0.50
2:B:16:G:H2'	2:B:17:A:C8	2.47	0.50
1:A:466:SER:HB3	1:A:531:ILE:HD11	1.92	0.50
1:A:561:SER:O	1:A:565:LEU:N	2.41	0.49
2:B:15:U:H2'	2:B:16:G:C8	2.47	0.49
1:A:10:LYS:HG3	2:B:-1:C:O2	2.11	0.49
1:A:168:GLU:HG2	1:A:175:HIS:HB3	1.95	0.49
3:C:11:C:H2'	3:C:12:A:C8	2.46	0.49
1:A:170:LYS:HG3	1:A:193:TYR:CZ	2.47	0.49
1:A:835:ASN:ND2	2:B:-27:C:OP1	2.46	0.49
1:A:125:ASN:O	1:A:129:ILE:HG12	2.13	0.49
1:A:75:HIS:CE1	1:A:79:TYR:HB2	2.48	0.49
1:A:636:LYS:NZ	1:A:645:GLN:HB2	2.28	0.49
1:A:330:THR:O	1:A:333:ARG:HG2	2.12	0.49
1:A:730:PHE:O	1:A:733:VAL:HG12	2.13	0.49
2:B:1:G:H2'	2:B:1:G:N3	2.28	0.48
1:A:464:ALA:HA	1:A:467:LYS:HZ2	1.78	0.48
1:A:381:ALA:O	1:A:384:SER:OG	2.26	0.48
1:A:150:LEU:H	1:A:150:LEU:HD23	1.78	0.48
1:A:700:LYS:O	1:A:704:ILE:HG22	2.13	0.48
3:C:4:G:H2'	3:C:5:C:C6	2.49	0.48
1:A:27:THR:HG21	1:A:35:ALA:HB1	1.94	0.47
1:A:37:LEU:HD21	1:A:40:ILE:HD11	1.96	0.47
1:A:700:LYS:HA	1:A:703:LYS:HB2	1.96	0.47
1:A:293:ALA:HB3	1:A:358:LYS:HE2	1.95	0.47
1:A:596:VAL:HA	1:A:599:ASN:OD1	2.15	0.47
1:A:710:THR:HG22	1:A:714:HIS:CE1	2.50	0.47
1:A:714:HIS:O	1:A:718:ASN:ND2	2.48	0.47
3:C:8:U:H2'	3:C:9:G:C8	2.49	0.47
3:C:16:U:H2'	3:C:17:G:C8	2.50	0.47
1:A:560:LEU:HB2	1:A:565:LEU:HD13	1.97	0.47
1:A:325:LEU:HD12	1:A:327:PHE:H	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:133:LEU:O	1:A:137:ILE:HG12	2.15	0.46
1:A:648:ARG:NH2	3:C:8:U:OP1	2.48	0.46
1:A:392:LEU:O	1:A:396:ASP:HB2	2.16	0.46
3:C:14:G:H2'	3:C:15:A:C8	2.48	0.46
1:A:910:TYR:OH	1:A:923:ARG:HG2	2.16	0.46
1:A:707:LEU:O	1:A:711:VAL:HG23	2.16	0.46
2:B:24:C:H2'	2:B:25:C:C6	2.51	0.46
1:A:601:ARG:HH11	1:A:604:TYR:HD2	1.64	0.46
1:A:331:LYS:HG2	1:A:415:TYR:CE2	2.51	0.46
1:A:568:LEU:O	1:A:572:PHE:HB2	2.15	0.45
1:A:703:LYS:HZ1	3:C:7:C:H4'	1.81	0.45
1:A:893:ARG:HA	1:A:893:ARG:HD2	1.78	0.45
1:A:214:SER:OG	1:A:223:ASN:OD1	2.18	0.45
1:A:277:ASP:OD1	1:A:459:GLY:HA3	2.17	0.45
1:A:713:TYR:OH	1:A:717:LYS:HE2	2.15	0.45
1:A:331:LYS:HB3	1:A:415:TYR:OH	2.17	0.45
1:A:704:ILE:HG12	1:A:704:ILE:O	2.16	0.45
1:A:643:LYS:HB2	2:B:12:U:O2'	2.17	0.45
1:A:331:LYS:HG2	1:A:415:TYR:HE2	1.82	0.44
1:A:635:GLN:OE1	1:A:636:LYS:HG3	2.17	0.44
1:A:324:ASN:ND2	3:C:24:G:O4'	2.50	0.44
1:A:336:MET:HG3	1:A:342:MET:HE1	2.00	0.44
3:C:25:G:H2'	3:C:26:C:C6	2.52	0.44
1:A:782:MET:HA	1:A:782:MET:HE2	2.00	0.44
1:A:658:LYS:HB3	1:A:660:LYS:HZ3	1.81	0.44
1:A:61:ASP:N	1:A:61:ASP:OD1	2.48	0.44
1:A:18:LEU:HD13	1:A:118:ILE:HD12	2.00	0.43
1:A:605:LEU:HD11	1:A:712:ILE:HG22	2.00	0.43
1:A:888:HIS:CE1	1:A:925:LEU:HD13	2.52	0.43
1:A:137:ILE:HG13	1:A:138:THR:N	2.32	0.43
2:B:3:C:C4	2:B:4:A:C5	3.06	0.43
1:A:477:ASP:O	1:A:481:ILE:HG13	2.19	0.43
1:A:896:MET:HE1	1:A:911:PHE:CB	2.46	0.43
1:A:136:TYR:CE2	1:A:484:LEU:HB2	2.53	0.43
1:A:332:LEU:HD12	1:A:415:TYR:CZ	2.54	0.43
1:A:624:VAL:HB	1:A:670:THR:HG23	2.00	0.43
1:A:528:LEU:HD23	1:A:531:ILE:HD12	2.00	0.42
1:A:368:TYR:CZ	1:A:372:ILE:HD11	2.55	0.42
1:A:188:ALA:O	1:A:192:GLN:HG3	2.19	0.42
1:A:554:ARG:HA	1:A:558:THR:HG22	2.02	0.42
1:A:896:MET:HE1	1:A:911:PHE:C	2.44	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:601:ARG:NH2	1:A:710:THR:HG23	2.35	0.42
2:B:22:G:H2'	2:B:23:C:C6	2.55	0.42
1:A:157:PHE:HE1	1:A:243:VAL:HB	1.85	0.42
1:A:497:SER:O	1:A:501:VAL:HG23	2.20	0.42
1:A:650:TYR:CZ	1:A:654:ILE:HD12	2.54	0.42
2:B:-23:A:N1	2:B:-13:C:N4	2.67	0.42
1:A:20:SER:HB3	1:A:25:TYR:CE1	2.55	0.42
1:A:363:MET:HE3	1:A:430:MET:SD	2.60	0.41
1:A:531:ILE:HG22	1:A:535:ALA:HB2	2.02	0.41
1:A:949:ASP:OD2	1:A:952:GLU:N	2.50	0.41
1:A:75:HIS:CD2	1:A:76:PRO:HD2	2.55	0.41
1:A:199:PHE:HE2	1:A:232:LEU:HD11	1.85	0.41
1:A:541:ILE:HG23	1:A:544:ALA:H	1.86	0.41
1:A:545:ARG:NH2	1:A:597:ILE:HD13	2.35	0.41
1:A:147:ILE:HG23	1:A:204:ARG:HB3	2.02	0.41
1:A:487:THR:HG22	1:A:491:LYS:HD2	2.03	0.41
1:A:473:THR:HG22	1:A:484:LEU:HD23	2.03	0.41
1:A:593:ILE:O	1:A:597:ILE:HG22	2.20	0.41
1:A:550:ILE:HD11	1:A:569:ALA:HB1	2.02	0.41
1:A:890:ILE:O	1:A:894:ILE:HG13	2.21	0.41
3:C:5:C:N4	3:C:6:G:O6	2.53	0.41
1:A:206:GLY:HA2	1:A:213:PHE:CD2	2.56	0.40
1:A:315:ARG:O	1:A:319:MET:HB2	2.21	0.40
1:A:650:TYR:CE1	1:A:665:LYS:HA	2.56	0.40
1:A:730:PHE:HA	1:A:733:VAL:HG12	2.03	0.40

There are no symmetry-related clashes.

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 PDB entries followed by that with respect to all EM entries.

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	894/967 (92%)	842 (94%)	52 (6%)	0	100	100

There are no Ramachandran outliers to report.

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 PDB entries followed by that with respect to all EM entries.

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	775/842 (92%)	773 (100%)	2 (0%)	91 96

All (2) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	909	GLU
1	A	916	ASP

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

Mol	Chain	Res	Type
1	A	121	GLN
1	A	263	ASN
1	A	312	GLN
1	A	680	GLN
1	A	797	ASN
1	A	839	ASN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
2	B	54/55 (98%)	9 (16%)	0
3	C	24/30 (80%)	0	0
All	All	78/85 (91%)	9 (11%)	0

All (9) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
2	B	-22	C
2	B	-21	C

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Mol	Chain	Res	Type
2	B	-19	A
2	B	-18	C
2	B	-12	G
2	B	-4	A
2	B	1	G
2	B	2	C
2	B	3	C

There are no RNA pucker outliers to report.

5.4 Non-standard residues in protein, DNA, RNA chains (i)

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 1 ligands modelled in this entry, 1 is 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 (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.