



Full wwPDB EM Validation Report ⓘ

Jul 8, 2025 – 03:21 PM JST

PDB ID : 9JN9 / pdb_00009jn9
EMDB ID : EMD-61620
Title : Cryo-EM structure of human SLFN14
Authors : Luo, M.; Jia, X.D.; Wang, Z.W.; Yang, J.Y.; Zhang, Q.F.; Gao, S.
Deposited on : 2024-09-23
Resolution : 3.36 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 Phenix2.0rc1
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : **FAILED**
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.44

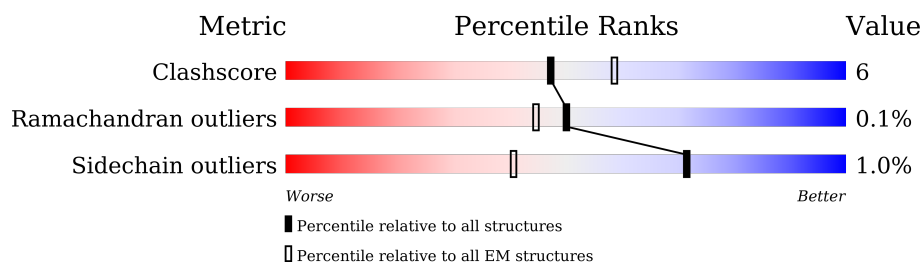
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.36 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

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 $\leq 5\%$.

Mol	Chain	Length	Quality of chain
1	A	921	
1	B	921	

2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 13552 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 Protein SLFN14.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	846	Total	C	N	O	S	0	0
			6775	4335	1153	1237	50		
1	B	846	Total	C	N	O	S	0	0
			6775	4335	1153	1237	50		

There are 24 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-8	GLY	-	expression tag	UNP P0C7P3
A	-7	PRO	-	expression tag	UNP P0C7P3
A	-6	HIS	-	expression tag	UNP P0C7P3
A	-5	MET	-	expression tag	UNP P0C7P3
A	-4	GLY	-	expression tag	UNP P0C7P3
A	-3	GLY	-	expression tag	UNP P0C7P3
A	-2	SER	-	expression tag	UNP P0C7P3
A	-1	GLU	-	expression tag	UNP P0C7P3
A	0	PHE	-	expression tag	UNP P0C7P3
A	206	ALA	GLU	engineered mutation	UNP P0C7P3
A	211	ALA	GLU	engineered mutation	UNP P0C7P3
A	356	SER	PRO	conflict	UNP P0C7P3
B	-8	GLY	-	expression tag	UNP P0C7P3
B	-7	PRO	-	expression tag	UNP P0C7P3
B	-6	HIS	-	expression tag	UNP P0C7P3
B	-5	MET	-	expression tag	UNP P0C7P3
B	-4	GLY	-	expression tag	UNP P0C7P3
B	-3	GLY	-	expression tag	UNP P0C7P3
B	-2	SER	-	expression tag	UNP P0C7P3
B	-1	GLU	-	expression tag	UNP P0C7P3
B	0	PHE	-	expression tag	UNP P0C7P3
B	206	ALA	GLU	engineered mutation	UNP P0C7P3
B	211	ALA	GLU	engineered mutation	UNP P0C7P3
B	356	SER	PRO	conflict	UNP P0C7P3

- Molecule 2 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by

depositor).

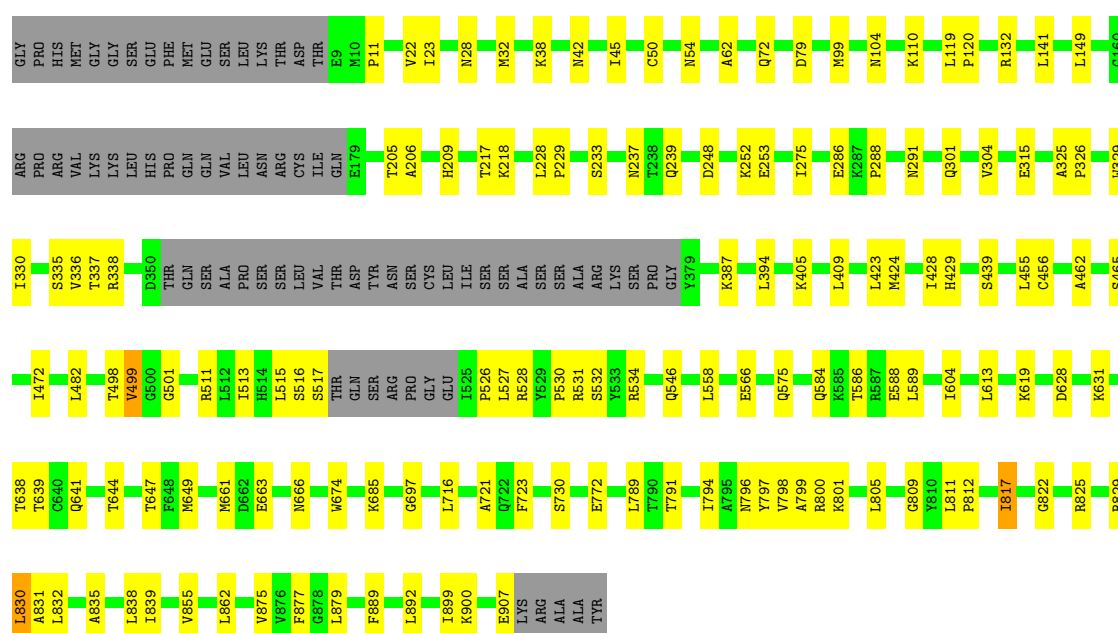
Mol	Chain	Residues	Atoms		AltConf
2	A	1	Total 1	Zn 1	0
2	B	1	Total 1	Zn 1	0

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.

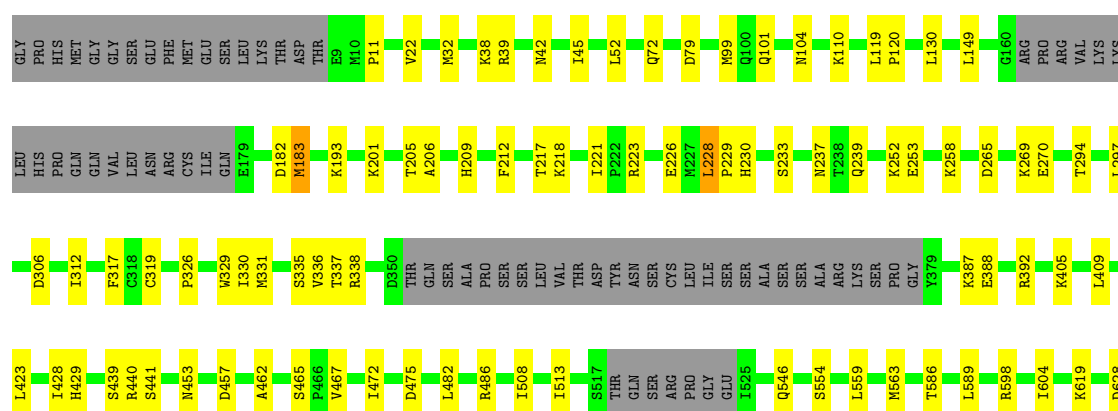
• Molecule 1: Protein SLFN14

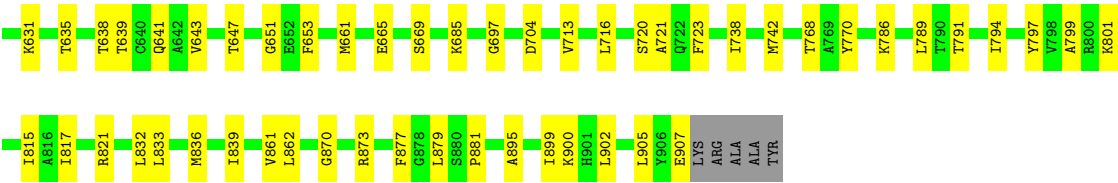
Chain A: 



• Molecule 1: Protein SLFN14

Chain B: 





4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	735934	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 ($e^-/\text{\AA}^2$)	60	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	3000	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: ZN

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	0.25	0/6919	0.60	2/9336 (0.0%)
1	B	0.25	0/6919	0.60	5/9336 (0.1%)
All	All	0.25	0/13838	0.60	7/18672 (0.0%)

There are no bond length outliers.

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	182	ASP	N-CA-C	-7.40	100.98	110.53
1	B	229	PRO	N-CA-C	-5.92	105.23	113.81
1	A	772	GLU	N-CA-C	-5.83	105.94	114.39
1	B	182	ASP	CA-C-O	-5.57	115.53	121.94
1	B	770	TYR	CA-C-N	5.55	132.14	121.54
1	B	770	TYR	C-N-CA	5.55	132.14	121.54
1	A	532	SER	N-CA-C	-5.15	108.02	114.56

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	6775	0	6856	77	0
1	B	6775	0	6855	84	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	A	1	0	0	0	0
2	B	1	0	0	0	0
All	All	13552	0	13711	159	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 6.

All (159) 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:619:LYS:HG2	1:A:641:GLN:HE21	1.61	0.66
1:A:830:LEU:C	1:A:832:LEU:H	2.06	0.64
1:B:453:ASN:HD21	1:B:475:ASP:HB2	1.62	0.64
1:B:789:LEU:H	1:B:907:GLU:HG2	1.62	0.64
1:B:467:VAL:O	1:B:508:ILE:HA	1.99	0.62
1:B:149:LEU:HD11	1:B:237:ASN:HB3	1.81	0.62
1:A:22:VAL:HG21	1:A:45:ILE:HD11	1.83	0.61
1:A:291:ASN:HB2	1:A:315:GLU:HB3	1.83	0.60
1:A:456:CYS:HB3	1:A:472:ILE:HD13	1.84	0.59
1:B:329:TRP:HE1	1:B:336:VAL:HB	1.67	0.59
1:A:424:MET:HE1	1:A:472:ILE:HD11	1.84	0.59
1:B:598:ARG:NH2	1:B:870:GLY:O	2.33	0.58
1:A:685:LYS:HE2	1:A:697:GLY:H	1.68	0.58
1:B:119:LEU:HD12	1:B:120:PRO:HD2	1.86	0.58
1:A:119:LEU:HD12	1:A:120:PRO:HD2	1.86	0.57
1:B:99:MET:SD	1:B:101:GLN:NE2	2.76	0.57
1:B:221:ILE:HG12	1:B:270:GLU:HG3	1.86	0.57
1:A:797:TYR:O	1:A:801:LYS:NZ	2.37	0.56
1:A:42:ASN:ND2	1:A:79:ASP:OD2	2.38	0.56
1:B:647:THR:O	1:B:651:GLY:N	2.37	0.56
1:B:462:ALA:HB3	1:B:465:SER:HB3	1.87	0.56
1:B:797:TYR:O	1:B:801:LYS:NZ	2.39	0.55
1:B:832:LEU:O	1:B:836:MET:N	2.35	0.55
1:B:294:THR:HG22	1:B:312:ILE:HG23	1.87	0.55
1:A:329:TRP:HE1	1:A:336:VAL:HB	1.72	0.55
1:B:899:ILE:HG22	1:B:900:LYS:HG2	1.87	0.55
1:A:498:THR:OG1	1:A:499:VAL:N	2.40	0.54
1:B:817:ILE:HA	1:B:877:PHE:HB2	1.89	0.54
1:A:619:LYS:O	1:A:641:GLN:NE2	2.41	0.54
1:A:644:THR:H	1:A:647:THR:HB	1.72	0.53
1:B:685:LYS:HE2	1:B:697:GLY:H	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:586:THR:HG21	1:A:589:LEU:HD13	1.90	0.53
1:A:817:ILE:HA	1:A:877:PHE:HB2	1.90	0.53
1:A:233:SER:O	1:A:237:ASN:ND2	2.34	0.53
1:B:201:LYS:HG2	1:B:253:GLU:HA	1.90	0.53
1:B:42:ASN:ND2	1:B:79:ASP:OD2	2.42	0.53
1:A:899:ILE:HG22	1:A:900:LYS:HG2	1.92	0.52
1:A:252:LYS:NZ	1:B:72:GLN:O	2.40	0.52
1:A:32:MET:HB3	1:A:38:LYS:HD3	1.92	0.52
1:A:217:THR:OG1	1:A:218:LYS:N	2.43	0.52
1:B:217:THR:OG1	1:B:218:LYS:N	2.40	0.52
1:A:575:GLN:NE2	1:A:730:SER:OG	2.43	0.52
1:A:799:ALA:HB1	1:A:839:ILE:HB	1.92	0.52
1:B:22:VAL:HG21	1:B:45:ILE:HD11	1.91	0.52
1:B:799:ALA:HB1	1:B:839:ILE:HB	1.92	0.52
1:B:833:LEU:O	1:B:836:MET:HB2	2.10	0.52
1:B:604:ILE:HG23	1:B:638:THR:HB	1.91	0.51
1:B:716:LEU:HB3	1:B:721:ALA:HB2	1.92	0.51
1:B:11:PRO:HA	1:B:486:ARG:HD3	1.92	0.51
1:B:628:ASP:OD1	1:B:628:ASP:N	2.42	0.51
1:A:62:ALA:O	1:A:104:ASN:ND2	2.42	0.51
1:B:669:SER:OG	1:B:713:VAL:O	2.28	0.51
1:A:558:LEU:HD22	1:A:809:GLY:HA3	1.93	0.50
1:A:805:LEU:HD21	1:A:875:VAL:HG11	1.93	0.50
1:B:742:MET:HE2	1:B:895:ALA:HB3	1.93	0.50
1:A:649:MET:HE2	1:A:674:TRP:HA	1.94	0.50
1:B:32:MET:HB3	1:B:38:LYS:HD3	1.93	0.50
1:A:796:ASN:O	1:A:800:ARG:NH1	2.44	0.50
1:A:511:ARG:HH21	1:A:526:PRO:HB3	1.76	0.50
1:B:586:THR:HG21	1:B:589:LEU:HD13	1.94	0.49
1:A:531:ARG:HB2	1:A:534:ARG:HH21	1.77	0.49
1:B:330:ILE:O	1:B:337:THR:OG1	2.29	0.49
1:B:643:VAL:HB	1:B:647:THR:HB	1.94	0.49
1:A:72:GLN:O	1:B:252:LYS:NZ	2.46	0.49
1:B:817:ILE:HG23	1:B:862:LEU:HA	1.94	0.49
1:B:559:LEU:HG	1:B:563:MET:HE3	1.95	0.49
1:B:258:LYS:NZ	1:B:306:ASP:OD1	2.44	0.49
1:A:817:ILE:HG23	1:A:862:LEU:HA	1.95	0.49
1:B:738:ILE:HG23	1:B:895:ALA:HB1	1.95	0.49
1:B:387:LYS:HD2	1:B:546:GLN:HB3	1.95	0.48
1:A:604:ILE:HG23	1:A:638:THR:HB	1.95	0.48
1:A:822:GLY:HA2	1:A:825:ARG:HE	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:233:SER:OG	1:B:237:ASN:ND2	2.47	0.48
1:A:794:ILE:HG12	1:A:798:VAL:HB	1.96	0.47
1:A:584:GLN:HE21	1:A:613:LEU:HD11	1.79	0.47
1:B:388:GLU:OE2	1:B:392:ARG:NH2	2.47	0.47
1:A:23:ILE:HG21	1:A:28:ASN:HB2	1.97	0.47
1:A:628:ASP:HA	1:A:631:LYS:HB3	1.96	0.47
1:B:786:LYS:HB3	1:B:905:LEU:HG	1.97	0.47
1:A:291:ASN:HD22	1:A:315:GLU:HG2	1.80	0.47
1:B:317:PHE:HD2	1:B:319:CYS:H	1.61	0.47
1:B:183:MET:HE3	1:B:183:MET:HB3	1.62	0.46
1:B:457:ASP:OD2	1:B:457:ASP:N	2.48	0.46
1:B:39:ARG:HA	1:B:39:ARG:HD3	1.82	0.46
1:B:619:LYS:O	1:B:641:GLN:NE2	2.49	0.46
1:A:99:MET:HE3	1:A:530:PRO:HA	1.96	0.46
1:A:428:ILE:HG13	1:A:429:HIS:H	1.81	0.46
1:A:663:GLU:OE2	1:A:666:ASN:ND2	2.46	0.46
1:A:791:THR:HA	1:A:794:ILE:HG22	1.98	0.46
1:B:228:LEU:C	1:B:230:HIS:N	2.71	0.46
1:A:205:THR:OG1	1:A:206:ALA:N	2.49	0.46
1:A:330:ILE:O	1:A:337:THR:OG1	2.28	0.46
1:B:233:SER:O	1:B:237:ASN:ND2	2.36	0.46
1:B:335:SER:OG	1:B:336:VAL:N	2.48	0.45
1:A:462:ALA:HB3	1:A:465:SER:HB3	1.98	0.45
1:B:101:GLN:O	1:B:104:ASN:HB3	2.17	0.45
1:B:861:VAL:HB	1:B:873:ARG:HH12	1.81	0.45
1:B:472:ILE:HG13	1:B:513:ILE:HD11	1.98	0.45
1:A:301:GLN:NE2	1:A:304:VAL:O	2.49	0.45
1:B:52:LEU:HD23	1:B:331:MET:HG2	1.98	0.45
1:A:11:PRO:HB3	1:A:482:LEU:HD21	1.99	0.45
1:A:50:CYS:O	1:A:54:ASN:ND2	2.41	0.45
1:B:206:ALA:HB2	1:B:212:PHE:HE1	1.82	0.45
1:B:209:HIS:NE2	1:B:239:GLN:OE1	2.50	0.45
1:B:638:THR:OG1	1:B:639:THR:N	2.50	0.45
1:A:209:HIS:CD2	1:A:239:GLN:HB3	2.52	0.45
1:B:628:ASP:HA	1:B:631:LYS:HB3	1.98	0.45
1:A:661:MET:HE3	1:A:661:MET:HB2	1.88	0.45
1:A:889:PHE:O	1:A:892:LEU:HB3	2.16	0.45
1:B:205:THR:OG1	1:B:206:ALA:N	2.50	0.44
1:B:554:SER:O	1:B:554:SER:OG	2.36	0.44
1:B:110:LYS:HE2	1:B:110:LYS:HB3	1.84	0.44
1:A:498:THR:O	1:A:501:GLY:N	2.45	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:325:ALA:HA	1:A:326:PRO:HD3	1.90	0.44
1:A:835:ALA:O	1:A:838:LEU:HB2	2.18	0.44
1:A:811:LEU:HD12	1:A:812:PRO:HD2	2.00	0.43
1:A:830:LEU:C	1:A:832:LEU:N	2.72	0.43
1:B:11:PRO:HB3	1:B:482:LEU:HD21	2.00	0.43
1:B:409:LEU:HD13	1:B:439:SER:HA	1.99	0.43
1:A:638:THR:OG1	1:A:639:THR:N	2.51	0.43
1:B:879:LEU:HD23	1:B:881:PRO:HD3	2.01	0.43
1:A:789:LEU:H	1:A:907:GLU:HG2	1.83	0.43
1:A:248:ASP:N	1:A:253:GLU:O	2.49	0.42
1:A:527:LEU:HD23	1:A:528:ARG:H	1.84	0.42
1:B:631:LYS:O	1:B:635:THR:OG1	2.35	0.42
1:A:335:SER:OG	1:A:336:VAL:N	2.52	0.42
1:A:387:LYS:HG2	1:A:546:GLN:HG2	2.01	0.42
1:A:405:LYS:HD3	1:A:405:LYS:HA	1.84	0.42
1:B:716:LEU:O	1:B:721:ALA:N	2.51	0.42
1:B:817:ILE:HD11	1:B:832:LEU:HD13	2.02	0.42
1:A:409:LEU:HD13	1:A:439:SER:HA	2.01	0.42
1:B:130:LEU:HD21	1:B:149:LEU:HD22	2.01	0.41
1:B:661:MET:HE3	1:B:661:MET:HB2	1.95	0.41
1:A:228:LEU:HD13	1:A:275:ILE:HD11	2.02	0.41
1:A:228:LEU:N	1:A:229:PRO:HD2	2.34	0.41
1:A:586:THR:OG1	1:A:588:GLU:O	2.36	0.41
1:A:716:LEU:HB3	1:A:721:ALA:HB2	2.03	0.41
1:B:428:ILE:HG13	1:B:429:HIS:H	1.85	0.41
1:B:791:THR:HA	1:B:794:ILE:HG22	2.03	0.41
1:A:149:LEU:HD11	1:A:237:ASN:HB3	2.01	0.41
1:A:329:TRP:HZ3	1:A:338:ARG:HH11	1.69	0.41
1:A:472:ILE:HG13	1:A:513:ILE:HD11	2.03	0.41
1:A:832:LEU:HD11	1:A:879:LEU:HD13	2.02	0.41
1:A:110:LYS:HE2	1:A:110:LYS:HB3	1.89	0.41
1:A:394:LEU:HD21	1:A:566:GLU:HG3	2.02	0.41
1:B:643:VAL:HG11	1:B:653:PHE:HZ	1.86	0.41
1:B:326:PRO:O	1:B:338:ARG:NE	2.54	0.40
1:B:720:SER:O	1:B:720:SER:OG	2.31	0.40
1:B:223:ARG:HA	1:B:226:GLU:HG3	2.04	0.40
1:B:440:ARG:HG2	1:B:441:SER:H	1.86	0.40
1:B:738:ILE:HG12	1:B:902:LEU:HD22	2.03	0.40
1:B:405:LYS:HA	1:B:405:LYS:HD3	1.82	0.40
1:B:265:ASP:O	1:B:269:LYS:NZ	2.49	0.40
1:B:665:GLU:OE2	1:B:704:ASP:N	2.39	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:815:ILE:HD12	1:B:877:PHE:HE2	1.86	0.40
1:A:132:ARG:HB2	1:A:141:LEU:HD11	2.03	0.40
1:A:286:GLU:HG2	1:A:288:PRO:HD3	2.03	0.40
1:B:193:LYS:HB3	1:B:297:LEU:HD21	2.03	0.40
1:B:821:ARG:HD3	1:B:821:ARG:HA	1.84	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	838/921 (91%)	748 (89%)	88 (10%)	2 (0%)	44	71
1	B	838/921 (91%)	751 (90%)	87 (10%)	0	100	100
All	All	1676/1842 (91%)	1499 (89%)	175 (10%)	2 (0%)	50	77

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	499	VAL
1	A	831	ALA

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 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	759/824 (92%)	749 (99%)	10 (1%)	65	79
1	B	759/824 (92%)	754 (99%)	5 (1%)	81	89
All	All	1518/1648 (92%)	1503 (99%)	15 (1%)	71	84

All (15) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	423	LEU
1	A	455	LEU
1	A	515	LEU
1	A	516	SER
1	A	517	SER
1	A	723	PHE
1	A	817	ILE
1	A	829	ARG
1	A	830	LEU
1	A	855	VAL
1	B	183	MET
1	B	228	LEU
1	B	423	LEU
1	B	723	PHE
1	B	768	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (26) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	230	HIS
1	A	263	ASN
1	A	282	HIS
1	A	291	ASN
1	A	417	HIS
1	A	487	ASN
1	A	546	GLN
1	A	575	GLN
1	A	584	GLN
1	A	641	GLN
1	A	650	GLN
1	A	680	ASN
1	A	733	HIS
1	A	793	GLN
1	B	28	ASN

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Mol	Chain	Res	Type
1	B	313	GLN
1	B	453	ASN
1	B	575	GLN
1	B	577	GLN
1	B	641	GLN
1	B	658	HIS
1	B	673	ASN
1	B	680	ASN
1	B	696	HIS
1	B	803	HIS
1	B	901	HIS

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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 2 ligands modelled in this entry, 2 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 [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.