Full wwPDB EM Validation Report ⓘ

Jul 9, 2025 – 12:20 PM JST

PDB ID	:	8H94 / pdb_00008h94
EMDB ID	:	EMD-34554
Title	:	Structure of mouse SCMC bound with KH domain of FILIA
Authors	:	Chi, P.; Ou, G.; Han, Z.; Li, J.; Deng, D.
Deposited on	:	2022-10-24
Resolution	:	2.90 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:

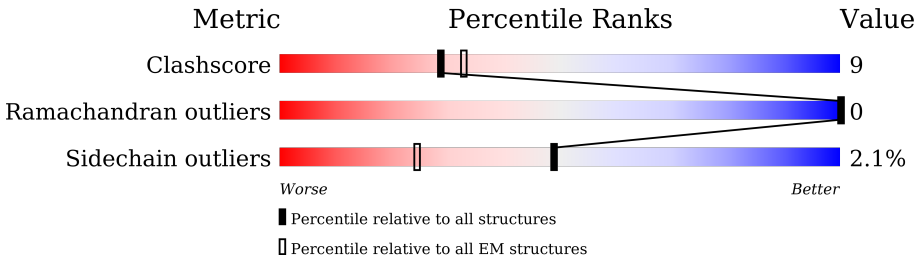
EMDB validation analysis	:	FAILED
MolProbity	:	4-5-2 with Phenix2.0rc1
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	FAILED
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	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 2.90 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 <=5%

Mol	Chain	Length	Quality of chain
1	A	1059	69% 20% 10%
2	B	581	49% 14% 37%
3	C	164	44% 10% 46%

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 11098 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 NACHT, LRR and PYD domains-containing protein 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	949	7481	4760	1267	1388	66	0	0

- Molecule 2 is a protein called Transducin-like enhancer protein 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	367	2898	1837	508	533	20	0	0

- Molecule 3 is a protein called Oocyte-expressed protein homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	89	719	460	123	131	5	0	0

3 Residue-property plots (i)

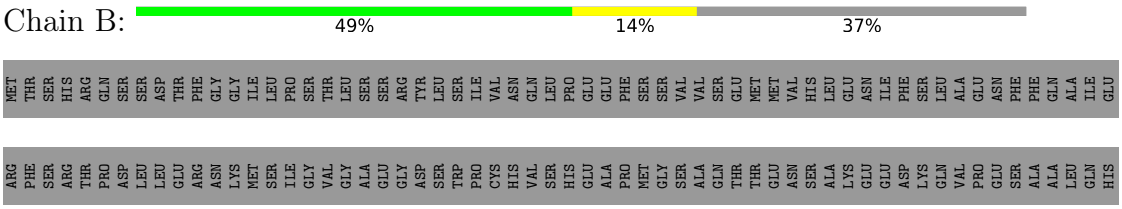
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded 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.

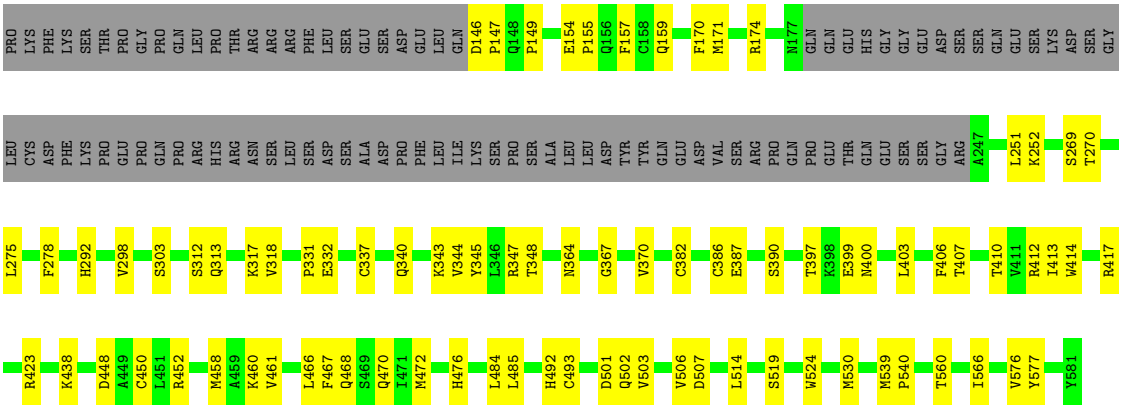
• Molecule 1: NACHT, LRR and PYD domains-containing protein 5

Chain A:

• Molecule 2: Transducin-like enhancer protein 6

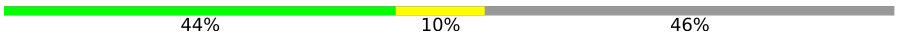
Chain B:

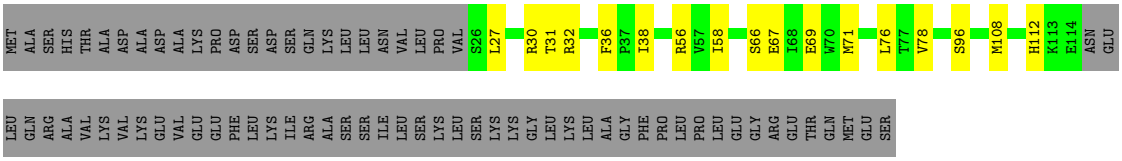




• Molecule 3: Oocyte-expressed protein homolog

Chain C:





4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	266340	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	46.7	Depositor
Minimum defocus (nm)	1700	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor

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	0.23	0/7613	0.42	0/10294
2	B	0.22	0/2964	0.44	0/4023
3	C	0.19	0/736	0.38	0/1003
All	All	0.23	0/11313	0.42	0/15320

There are no bond length outliers.

There are no bond angle outliers.

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	7481	0	7571	142	0
2	B	2898	0	2875	55	0
3	C	719	0	713	10	0
All	All	11098	0	11159	204	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 9.

All (204) 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:207:LYS:O	1:A:211:GLN:HB2	1.65	0.95

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:402:ARG:NH2	1:A:409:ASP:OD1	2.13	0.81
1:A:1051:GLU:N	1:A:1051:GLU:OE2	2.19	0.74
1:A:315:HIS:HA	1:A:318:ILE:HG22	1.70	0.74
1:A:381:GLN:N	1:A:381:GLN:OE1	2.23	0.70
2:B:146:ASP:HB3	2:B:147:PRO:HD3	1.75	0.69
1:A:744:MET:HA	1:A:747:THR:HG22	1.74	0.68
1:A:875:THR:HG23	1:A:904:VAL:HB	1.76	0.67
1:A:372:LYS:HB2	1:A:425:HIS:HE1	1.57	0.67
2:B:343:LYS:HE2	2:B:343:LYS:HA	1.75	0.67
2:B:450:CYS:HB2	2:B:452:ARG:HH21	1.59	0.67
1:A:207:LYS:HG2	1:A:211:GLN:HG3	1.77	0.66
1:A:998:MET:HE1	1:A:1017:LEU:HD21	1.78	0.66
1:A:725:CYS:O	1:A:754:ARG:NH1	2.29	0.65
1:A:945:CYS:HA	1:A:948:LEU:HB3	1.79	0.65
1:A:192:GLN:N	1:A:192:GLN:OE1	2.30	0.64
1:A:699:LYS:HA	1:A:727:VAL:HA	1.79	0.63
2:B:468:GLN:OE1	2:B:468:GLN:N	2.20	0.63
1:A:840:ALA:HA	1:A:868:LYS:HD2	1.80	0.63
1:A:400:THR:HG22	1:A:402:ARG:HG3	1.81	0.63
1:A:575:LYS:HG2	1:A:625:LEU:HD13	1.80	0.62
1:A:819:ASN:HA	1:A:848:HIS:HB3	1.81	0.62
1:A:910:GLN:HE22	1:A:939:LYS:HD3	1.64	0.61
1:A:536:GLY:O	2:B:252:LYS:NZ	2.33	0.60
1:A:879:VAL:HG23	1:A:883:ALA:HB3	1.82	0.60
1:A:843:ARG:NH1	1:A:1053:ASP:O	2.34	0.60
1:A:818:SER:HB2	1:A:847:ASN:HB2	1.84	0.60
1:A:1006:GLN:HG3	1:A:1033:VAL:HG22	1.84	0.59
1:A:617:GLN:HE21	1:A:620:GLN:HB3	1.66	0.58
1:A:171:MET:HG2	1:A:216:LEU:HB2	1.86	0.58
2:B:502:GLN:N	2:B:502:GLN:OE1	2.37	0.58
1:A:346:LEU:HD13	1:A:350:CYS:HB2	1.85	0.57
1:A:736:GLU:N	1:A:736:GLU:OE2	2.37	0.57
1:A:381:GLN:O	1:A:385:ILE:HD12	2.04	0.57
1:A:771:ILE:HG22	1:A:801:LEU:HD11	1.87	0.57
2:B:344:VAL:HG12	2:B:364:ASN:HB3	1.87	0.56
1:A:531:ALA:HB1	1:A:565:PHE:HA	1.88	0.56
1:A:576:MET:HA	1:A:576:MET:HE2	1.88	0.56
1:A:939:LYS:HA	1:A:942:ILE:HG22	1.87	0.56
1:A:807:PHE:HA	1:A:833:PHE:HD1	1.72	0.55
1:A:143:LEU:HD23	1:A:286:ILE:HB	1.88	0.55
1:A:814:HIS:CD2	1:A:843:ARG:HD2	2.41	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:770:MET:O	1:A:770:MET:HE3	2.08	0.54
3:C:66:SER:HA	3:C:69:GLU:HG3	1.88	0.54
1:A:832:GLN:HG2	1:A:835:ARG:HH12	1.71	0.54
2:B:312:SER:OG	2:B:313:GLN:N	2.42	0.54
1:A:372:LYS:HB2	1:A:425:HIS:CE1	2.39	0.53
1:A:252:SER:HB3	1:A:258:LEU:HB2	1.91	0.53
1:A:904:VAL:O	1:A:933:ASN:N	2.37	0.53
1:A:733:ASP:HB3	1:A:761:ALA:HB3	1.90	0.53
1:A:914:GLU:N	1:A:914:GLU:OE1	2.41	0.53
1:A:814:HIS:HB3	1:A:1056:TRP:CH2	2.45	0.52
2:B:155:PRO:HA	2:B:251:LEU:HD12	1.91	0.52
2:B:566:ILE:HG23	2:B:577:TYR:HB2	1.92	0.52
1:A:680:GLU:N	1:A:680:GLU:OE2	2.42	0.52
1:A:904:VAL:HA	1:A:932:GLY:H	1.74	0.51
1:A:921:THR:OG1	1:A:950:GLN:OE1	2.24	0.51
3:C:32:ARG:NH1	3:C:36:PHE:O	2.42	0.51
2:B:345:TYR:HD1	2:B:347:ARG:HH22	1.59	0.51
1:A:372:LYS:HE3	1:A:423:LEU:HA	1.93	0.51
1:A:187:LYS:HE2	1:A:243:GLU:HG2	1.93	0.50
1:A:586:LYS:O	1:A:589:GLN:NE2	2.45	0.50
1:A:966:THR:OG1	1:A:968:ASN:OD1	2.27	0.50
1:A:237:SER:N	1:A:252:SER:OG	2.42	0.50
1:A:240:TRP:CD1	1:A:241:LYS:HG3	2.47	0.50
2:B:400:ASN:HD22	2:B:417:ARG:HH21	1.59	0.50
1:A:225:MET:HE1	1:A:250:MET:HG2	1.93	0.50
1:A:713:MET:HB3	1:A:744:MET:SD	2.51	0.50
1:A:338:GLU:HG2	1:A:364:LEU:HD21	1.94	0.49
1:A:879:VAL:HG13	1:A:906:CYS:HB3	1.94	0.49
2:B:406:PHE:HD2	2:B:410:THR:HG23	1.78	0.49
1:A:396:GLU:OE2	1:A:413:TYR:OH	2.31	0.49
1:A:382:GLU:HA	1:A:385:ILE:HD12	1.94	0.49
1:A:244:GLN:OE1	1:A:248:ILE:HG21	2.13	0.49
2:B:147:PRO:O	2:B:149:PRO:HD3	2.13	0.49
1:A:194:ILE:O	1:A:198:CYS:N	2.39	0.48
1:A:754:ARG:NH1	1:A:754:ARG:HB2	2.28	0.48
1:A:573:ASN:OD1	1:A:573:ASN:N	2.45	0.48
2:B:146:ASP:CB	2:B:147:PRO:HD3	2.41	0.48
1:A:939:LYS:O	1:A:943:THR:HG22	2.13	0.48
2:B:317:LYS:HD3	2:B:331:PRO:HG3	1.95	0.48
1:A:696:GLN:NE2	1:A:724:LYS:HE2	2.28	0.48
2:B:397:THR:HG23	2:B:399:GLU:H	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:599:ARG:HH11	1:A:599:ARG:HG3	1.78	0.48
1:A:856:TYR:CZ	1:A:879:VAL:HB	2.48	0.48
1:A:904:VAL:HG13	1:A:932:GLY:HA3	1.95	0.48
1:A:101:TYR:OH	1:A:197:GLU:OE2	2.19	0.47
1:A:208:ILE:HG21	1:A:240:TRP:CZ2	2.49	0.47
1:A:426:MET:HG3	1:A:427:ASN:N	2.29	0.47
1:A:631:ASN:O	1:A:635:VAL:HG23	2.14	0.47
1:A:511:PHE:O	1:A:512:GLU:HG2	2.14	0.47
1:A:611:CYS:HB2	1:A:612:PRO:HD3	1.96	0.47
2:B:413:ILE:HD12	2:B:423:ARG:HG3	1.95	0.47
1:A:233:ASP:OD1	1:A:233:ASP:N	2.46	0.47
1:A:544:ASP:OD2	2:B:159:GLN:NE2	2.43	0.47
2:B:467:PHE:HE2	2:B:503:VAL:HG21	1.80	0.47
2:B:514:LEU:HD11	2:B:530:MET:HE2	1.96	0.47
3:C:108:MET:O	3:C:112:HIS:ND1	2.31	0.47
1:A:794:LEU:HD23	1:A:820:ASN:ND2	2.30	0.47
1:A:983:LEU:HD12	1:A:984:ASN:H	1.80	0.47
2:B:298:VAL:HG21	2:B:348:THR:HA	1.95	0.47
1:A:160:LEU:O	1:A:164:GLN:HG2	2.15	0.46
1:A:499:MET:HE1	1:A:517:PRO:HG2	1.96	0.46
2:B:448:ASP:OD1	2:B:448:ASP:N	2.48	0.46
1:A:767:VAL:O	1:A:771:ILE:HG23	2.15	0.46
2:B:154:GLU:OE1	2:B:154:GLU:N	2.46	0.46
1:A:837:PRO:C	1:A:838:GLU:HG3	2.41	0.46
1:A:840:ALA:H	1:A:868:LYS:HE3	1.79	0.46
3:C:58:ILE:HG12	3:C:78:VAL:HG21	1.97	0.46
1:A:747:THR:HA	1:A:750:ILE:HG22	1.98	0.46
1:A:949:LYS:HB2	1:A:976:ALA:HA	1.98	0.46
2:B:458:MET:SD	2:B:460:LYS:HG2	2.56	0.45
1:A:112:SER:HB2	1:A:115:LEU:HD12	1.98	0.45
1:A:352:LEU:HD22	1:A:503:ILE:HG13	1.97	0.45
1:A:768:LYS:O	1:A:771:ILE:HG13	2.15	0.45
2:B:501:ASP:HB2	2:B:502:GLN:OE1	2.16	0.45
1:A:813:THR:HG23	1:A:842:GLN:HB2	1.98	0.45
3:C:56:ARG:HE	3:C:112:HIS:HD2	1.63	0.45
2:B:370:VAL:HB	2:B:382:CYS:HB2	1.97	0.45
1:A:179:VAL:CG2	1:A:222:LEU:H	2.30	0.45
2:B:485:LEU:HB2	2:B:493:CYS:HB2	1.99	0.45
2:B:269:SER:OG	2:B:270:THR:N	2.50	0.45
1:A:496:PHE:O	1:A:552:SER:HB3	2.17	0.44
3:C:30:ARG:NH1	3:C:31:THR:O	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:56:ARG:HE	3:C:112:HIS:CD2	2.34	0.44
1:A:348:LYS:HA	1:A:348:LYS:HD3	1.71	0.44
1:A:310:ARG:HG2	1:A:311:ILE:HD13	1.98	0.44
1:A:172:SER:HB2	1:A:211:GLN:OE1	2.17	0.44
1:A:924:LYS:HE2	1:A:924:LYS:HB2	1.59	0.44
3:C:27:LEU:HD12	3:C:27:LEU:HA	1.76	0.44
1:A:184:TRP:C	1:A:184:TRP:CD1	2.96	0.44
1:A:685:LEU:HD23	1:A:685:LEU:HA	1.85	0.44
1:A:998:MET:HG2	1:A:1026:VAL:HG11	2.00	0.44
2:B:292:HIS:CE1	2:B:317:LYS:HG3	2.53	0.44
2:B:470:GLN:H	2:B:470:GLN:HG3	1.52	0.44
1:A:176:PHE:HE2	1:A:178:SER:HB2	1.83	0.44
1:A:636:LEU:HD23	1:A:636:LEU:HA	1.83	0.44
1:A:813:THR:HG22	1:A:814:HIS:ND1	2.33	0.44
1:A:579:LYS:HD2	1:A:628:TRP:CZ2	2.53	0.43
2:B:506:VAL:HG23	2:B:507:ASP:OD2	2.17	0.43
1:A:151:LYS:HE3	1:A:151:LYS:HB2	1.69	0.43
3:C:38:ILE:HD12	3:C:38:ILE:HA	1.83	0.43
1:A:106:ILE:HG13	1:A:163:ALA:HB1	2.01	0.43
1:A:429:LEU:HD23	1:A:429:LEU:HA	1.76	0.43
1:A:550:PHE:O	1:A:553:GLN:NE2	2.51	0.43
2:B:390:SER:HB2	2:B:407:THR:OG1	2.19	0.43
1:A:166:LYS:HA	1:A:166:LYS:HD2	1.85	0.43
1:A:249:LEU:H	1:A:249:LEU:HD12	1.84	0.42
2:B:154:GLU:H	2:B:154:GLU:CD	2.27	0.42
2:B:519:SER:HB2	2:B:524:TRP:CE2	2.53	0.42
1:A:184:TRP:CZ3	1:A:225:MET:HG3	2.54	0.42
2:B:159:GLN:H	2:B:159:GLN:HG2	1.66	0.42
2:B:412:ARG:HG2	2:B:414:TRP:CZ2	2.54	0.42
1:A:657:MET:HE3	1:A:657:MET:HB3	1.80	0.42
2:B:367:GLY:HA2	2:B:386:CYS:SG	2.59	0.42
2:B:303:SER:HB3	2:B:560:THR:HG22	2.01	0.42
2:B:539:MET:O	2:B:540:PRO:C	2.63	0.42
2:B:438:LYS:HE3	2:B:476:HIS:NE2	2.34	0.42
1:A:867:THR:OG1	1:A:868:LYS:N	2.52	0.42
3:C:67:GLU:OE1	3:C:71:MET:HE2	2.20	0.42
2:B:155:PRO:HB3	2:B:157:PHE:CZ	2.54	0.42
1:A:847:ASN:HD22	2:B:269:SER:HB2	1.85	0.42
2:B:171:MET:HE3	2:B:171:MET:HB3	1.80	0.42
1:A:365:VAL:HG23	1:A:366:PHE:CD1	2.55	0.42
1:A:692:LEU:HD23	1:A:692:LEU:HA	1.77	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:102:LYS:HG2	1:A:163:ALA:O	2.20	0.41
1:A:125:LEU:HD13	1:A:158:ILE:HD11	2.02	0.41
2:B:337:CYS:SG	2:B:340:GLN:HG3	2.60	0.41
1:A:304:ILE:HD11	1:A:310:ARG:HE	1.85	0.41
1:A:393:MET:HB2	1:A:413:TYR:CE2	2.56	0.41
1:A:500:ASN:OD1	1:A:501:LYS:N	2.52	0.41
2:B:387:GLU:H	2:B:387:GLU:CD	2.28	0.41
1:A:224:ASP:OD1	1:A:224:ASP:N	2.46	0.41
1:A:881:ASP:HA	1:A:884:MET:HB2	2.02	0.41
1:A:294:SER:O	1:A:298:GLN:HG3	2.21	0.41
1:A:877:ASN:HA	1:A:878:PRO:HD3	1.91	0.41
2:B:170:PHE:O	2:B:174:ARG:HG2	2.19	0.41
2:B:275:LEU:HD12	2:B:278:PHE:HD2	1.86	0.41
1:A:306:ASN:OD1	1:A:310:ARG:NH2	2.53	0.41
1:A:251:TYR:OH	1:A:255:ARG:NH1	2.53	0.41
1:A:204:LEU:HD13	1:A:204:LEU:HA	1.84	0.41
1:A:622:LYS:HE3	1:A:627:GLU:HB3	2.03	0.41
2:B:472:MET:HE3	2:B:472:MET:HB3	1.81	0.41
1:A:171:MET:HE2	1:A:171:MET:HB2	1.93	0.41
1:A:303:ASN:HD22	1:A:341:GLN:HG2	1.84	0.41
1:A:435:ASN:OD1	1:A:435:ASN:N	2.53	0.41
1:A:728:GLU:HA	1:A:755:LEU:HA	2.03	0.41
2:B:492:HIS:HB2	2:B:506:VAL:HG22	2.03	0.41
1:A:605:ASP:N	1:A:605:ASP:OD1	2.54	0.40
2:B:318:VAL:O	2:B:332:GLU:N	2.52	0.40
2:B:347:ARG:HA	2:B:347:ARG:HD3	1.71	0.40
1:A:244:GLN:HE21	1:A:244:GLN:HB2	1.63	0.40
1:A:393:MET:HE3	1:A:405:PHE:CD2	2.56	0.40
1:A:939:LYS:O	1:A:942:ILE:HG22	2.21	0.40
1:A:1012:LEU:HD23	1:A:1012:LEU:HA	1.81	0.40
2:B:400:ASN:HD22	2:B:417:ARG:NH2	2.19	0.40
1:A:246:ILE:HA	1:A:249:LEU:HD13	2.02	0.40
1:A:538:SER:OG	1:A:541:ASP:OD2	2.28	0.40
1:A:735:CYS:O	1:A:737:LEU:HD22	2.20	0.40
2:B:343:LYS:HG3	2:B:345:TYR:HE2	1.86	0.40
2:B:467:PHE:CE2	2:B:503:VAL:HG21	2.57	0.40
1:A:572:ILE:HG21	1:A:578:LEU:HG	2.04	0.40
1:A:709:LYS:HB2	1:A:709:LYS:HE3	1.79	0.40
1:A:920:ILE:HD13	1:A:920:ILE:HA	1.96	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	945/1059 (89%)	898 (95%)	47 (5%)	0	100	100
2	B	363/581 (62%)	336 (93%)	27 (7%)	0	100	100
3	C	87/164 (53%)	85 (98%)	2 (2%)	0	100	100
All	All	1395/1804 (77%)	1319 (95%)	76 (5%)	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 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	849/960 (88%)	830 (98%)	19 (2%)	47	78
2	B	323/516 (63%)	318 (98%)	5 (2%)	60	85
3	C	78/143 (54%)	76 (97%)	2 (3%)	41	74
All	All	1250/1619 (77%)	1224 (98%)	26 (2%)	49	78

All (26) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	119	SER
1	A	121	GLU
1	A	122	MET
1	A	123	LYS
1	A	259	LEU

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Mol	Chain	Res	Type
1	A	291	LEU
1	A	515	VAL
1	A	573	ASN
1	A	643	LYS
1	A	647	LEU
1	A	649	ASP
1	A	771	ILE
1	A	800	HIS
1	A	866	ASN
1	A	876	MET
1	A	879	VAL
1	A	884	MET
1	A	974	SER
1	A	1017	LEU
2	B	403	LEU
2	B	461	VAL
2	B	466	LEU
2	B	484	LEU
2	B	576	VAL
3	C	76	LEU
3	C	96	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (20) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	99	GLN
1	A	244	GLN
1	A	303	ASN
1	A	355	GLN
1	A	425	HIS
1	A	466	GLN
1	A	535	ASN
1	A	617	GLN
1	A	828	GLN
1	A	829	GLN
1	A	832	GLN
1	A	910	GLN
1	A	980	ASN
1	A	1055	ASN
2	B	267	GLN
2	B	400	ASN
2	B	419	GLN

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Mol	Chain	Res	Type
2	B	511	ASN
2	B	547	GLN
3	C	98	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.