Full wwPDB EM Validation Report

Nov 13, 2024 – 10:37 AM JST

PDB ID	:	8K12
EMDB ID	:	EMD-36784
Title	:	SID1 transmembrane family member 2
Authors	:	Guo, H.; Qi, C.; Lu, Y.; Yang, H.; Zhu, Y.; Sun, F.; Ji, X.
Deposited on	:	2023-07-10
Resolution	:	3.30 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:

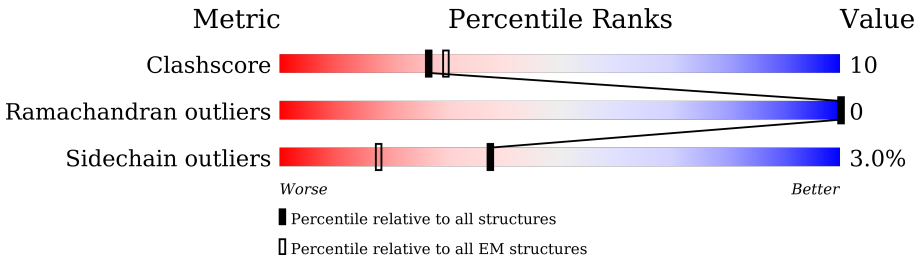
EMDB validation analysis	:	FAILED
MolProbity	:	4.02b-467
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	FAILED
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.39

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.30 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	522	52% 16% 32%
1	B	522	52% 16% 32%

2 Entry composition

There is only 1 type of molecule in this entry. The entry contains 5592 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 SID1 transmembrane family member 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	357	Total	C	N	O	S	0	0
			2796	1865	436	471	24		
1	B	357	Total	C	N	O	S	0	0
			2796	1865	436	471	24		

There are 126 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	?	-	SER	deletion	UNP Q8NBJ9
A	?	-	GLY	deletion	UNP Q8NBJ9
A	?	-	SER	deletion	UNP Q8NBJ9
A	?	-	THR	deletion	UNP Q8NBJ9
A	?	-	ASP	deletion	UNP Q8NBJ9
A	?	-	GLY	deletion	UNP Q8NBJ9
A	?	-	LEU	deletion	UNP Q8NBJ9
A	?	-	VAL	deletion	UNP Q8NBJ9
A	?	-	ASP	deletion	UNP Q8NBJ9
A	?	-	SER	deletion	UNP Q8NBJ9
A	?	-	ALA	deletion	UNP Q8NBJ9
A	?	-	GLY	deletion	UNP Q8NBJ9
A	?	-	THR	deletion	UNP Q8NBJ9
A	?	-	GLY	deletion	UNP Q8NBJ9
A	?	-	ASP	deletion	UNP Q8NBJ9
A	?	-	LEU	deletion	UNP Q8NBJ9
A	?	-	SER	deletion	UNP Q8NBJ9
A	?	-	TYR	deletion	UNP Q8NBJ9
A	?	-	GLY	deletion	UNP Q8NBJ9
A	?	-	TYR	deletion	UNP Q8NBJ9
A	?	-	GLN	deletion	UNP Q8NBJ9
A	?	-	GLY	deletion	UNP Q8NBJ9
A	?	-	ARG	deletion	UNP Q8NBJ9
A	?	-	SER	deletion	UNP Q8NBJ9
A	?	-	GLY	deletion	UNP Q8NBJ9
A	?	-	THR	deletion	UNP Q8NBJ9

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Chain	Residue	Modelled	Actual	Comment	Reference
A	?	-	ARG	deletion	UNP Q8NBJ9
A	?	-	PRO	deletion	UNP Q8NBJ9
A	?	-	ARG	deletion	UNP Q8NBJ9
A	?	-	VAL	deletion	UNP Q8NBJ9
A	?	-	ASP	deletion	UNP Q8NBJ9
A	?	-	SER	deletion	UNP Q8NBJ9
A	?	-	MET	deletion	UNP Q8NBJ9
A	?	-	SER	deletion	UNP Q8NBJ9
A	?	-	SER	deletion	UNP Q8NBJ9
A	?	-	VAL	deletion	UNP Q8NBJ9
A	?	-	GLU	deletion	UNP Q8NBJ9
A	?	-	GLU	deletion	UNP Q8NBJ9
A	?	-	ASP	deletion	UNP Q8NBJ9
A	?	-	ASP	deletion	UNP Q8NBJ9
A	?	-	TYR	deletion	UNP Q8NBJ9
A	833	ASP	-	expression tag	UNP Q8NBJ9
A	834	TYR	-	expression tag	UNP Q8NBJ9
A	835	LYS	-	expression tag	UNP Q8NBJ9
A	836	ASP	-	expression tag	UNP Q8NBJ9
A	837	HIS	-	expression tag	UNP Q8NBJ9
A	838	ASP	-	expression tag	UNP Q8NBJ9
A	839	GLY	-	expression tag	UNP Q8NBJ9
A	840	ASP	-	expression tag	UNP Q8NBJ9
A	841	TYR	-	expression tag	UNP Q8NBJ9
A	842	LYS	-	expression tag	UNP Q8NBJ9
A	843	ASP	-	expression tag	UNP Q8NBJ9
A	844	HIS	-	expression tag	UNP Q8NBJ9
A	845	ASP	-	expression tag	UNP Q8NBJ9
A	846	ILE	-	expression tag	UNP Q8NBJ9
A	847	ASP	-	expression tag	UNP Q8NBJ9
A	848	TYR	-	expression tag	UNP Q8NBJ9
A	849	LYS	-	expression tag	UNP Q8NBJ9
A	850	ASP	-	expression tag	UNP Q8NBJ9
A	851	ASP	-	expression tag	UNP Q8NBJ9
A	852	ASP	-	expression tag	UNP Q8NBJ9
A	853	ASP	-	expression tag	UNP Q8NBJ9
A	854	LYS	-	expression tag	UNP Q8NBJ9
B	?	-	SER	deletion	UNP Q8NBJ9
B	?	-	GLY	deletion	UNP Q8NBJ9
B	?	-	SER	deletion	UNP Q8NBJ9
B	?	-	THR	deletion	UNP Q8NBJ9
B	?	-	ASP	deletion	UNP Q8NBJ9

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Chain	Residue	Modelled	Actual	Comment	Reference
B	?	-	GLY	deletion	UNP Q8NBJ9
B	?	-	LEU	deletion	UNP Q8NBJ9
B	?	-	VAL	deletion	UNP Q8NBJ9
B	?	-	ASP	deletion	UNP Q8NBJ9
B	?	-	SER	deletion	UNP Q8NBJ9
B	?	-	ALA	deletion	UNP Q8NBJ9
B	?	-	GLY	deletion	UNP Q8NBJ9
B	?	-	THR	deletion	UNP Q8NBJ9
B	?	-	GLY	deletion	UNP Q8NBJ9
B	?	-	ASP	deletion	UNP Q8NBJ9
B	?	-	LEU	deletion	UNP Q8NBJ9
B	?	-	SER	deletion	UNP Q8NBJ9
B	?	-	TYR	deletion	UNP Q8NBJ9
B	?	-	GLY	deletion	UNP Q8NBJ9
B	?	-	TYR	deletion	UNP Q8NBJ9
B	?	-	GLN	deletion	UNP Q8NBJ9
B	?	-	GLY	deletion	UNP Q8NBJ9
B	?	-	ARG	deletion	UNP Q8NBJ9
B	?	-	SER	deletion	UNP Q8NBJ9
B	?	-	GLY	deletion	UNP Q8NBJ9
B	?	-	THR	deletion	UNP Q8NBJ9
B	?	-	ARG	deletion	UNP Q8NBJ9
B	?	-	PRO	deletion	UNP Q8NBJ9
B	?	-	ARG	deletion	UNP Q8NBJ9
B	?	-	VAL	deletion	UNP Q8NBJ9
B	?	-	ASP	deletion	UNP Q8NBJ9
B	?	-	SER	deletion	UNP Q8NBJ9
B	?	-	MET	deletion	UNP Q8NBJ9
B	?	-	SER	deletion	UNP Q8NBJ9
B	?	-	SER	deletion	UNP Q8NBJ9
B	?	-	VAL	deletion	UNP Q8NBJ9
B	?	-	GLU	deletion	UNP Q8NBJ9
B	?	-	GLU	deletion	UNP Q8NBJ9
B	?	-	ASP	deletion	UNP Q8NBJ9
B	?	-	ASP	deletion	UNP Q8NBJ9
B	?	-	TYR	deletion	UNP Q8NBJ9
B	833	ASP	-	expression tag	UNP Q8NBJ9
B	834	TYR	-	expression tag	UNP Q8NBJ9
B	835	LYS	-	expression tag	UNP Q8NBJ9
B	836	ASP	-	expression tag	UNP Q8NBJ9
B	837	HIS	-	expression tag	UNP Q8NBJ9
B	838	ASP	-	expression tag	UNP Q8NBJ9

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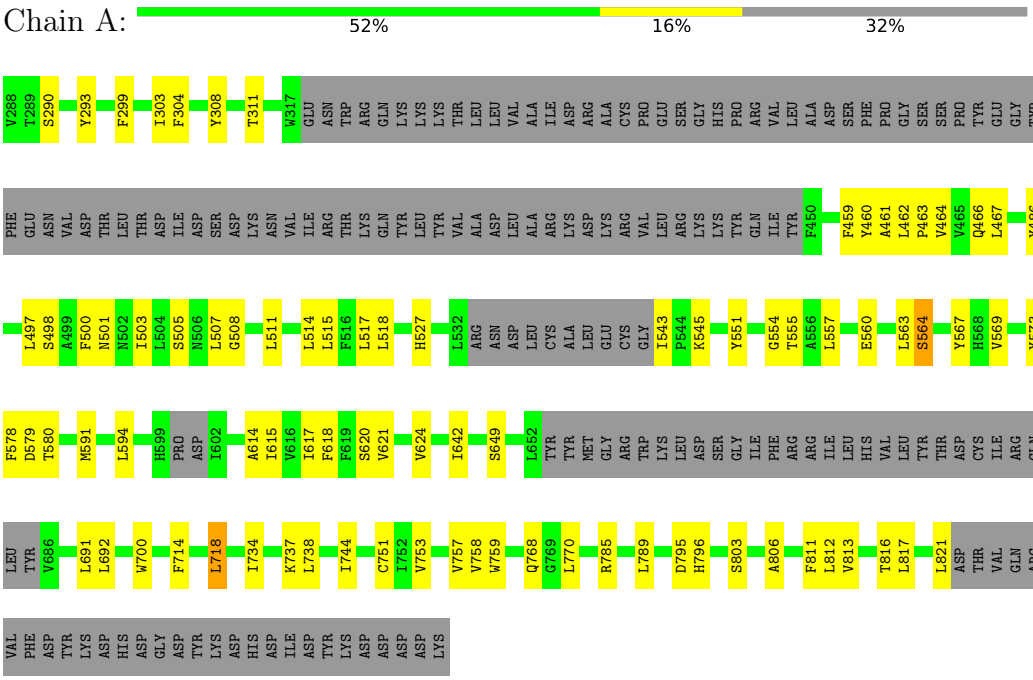
Chain	Residue	Modelled	Actual	Comment	Reference
B	839	GLY	-	expression tag	UNP Q8NBJ9
B	840	ASP	-	expression tag	UNP Q8NBJ9
B	841	TYR	-	expression tag	UNP Q8NBJ9
B	842	LYS	-	expression tag	UNP Q8NBJ9
B	843	ASP	-	expression tag	UNP Q8NBJ9
B	844	HIS	-	expression tag	UNP Q8NBJ9
B	845	ASP	-	expression tag	UNP Q8NBJ9
B	846	ILE	-	expression tag	UNP Q8NBJ9
B	847	ASP	-	expression tag	UNP Q8NBJ9
B	848	TYR	-	expression tag	UNP Q8NBJ9
B	849	LYS	-	expression tag	UNP Q8NBJ9
B	850	ASP	-	expression tag	UNP Q8NBJ9
B	851	ASP	-	expression tag	UNP Q8NBJ9
B	852	ASP	-	expression tag	UNP Q8NBJ9
B	853	ASP	-	expression tag	UNP Q8NBJ9
B	854	LYS	-	expression tag	UNP Q8NBJ9

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.

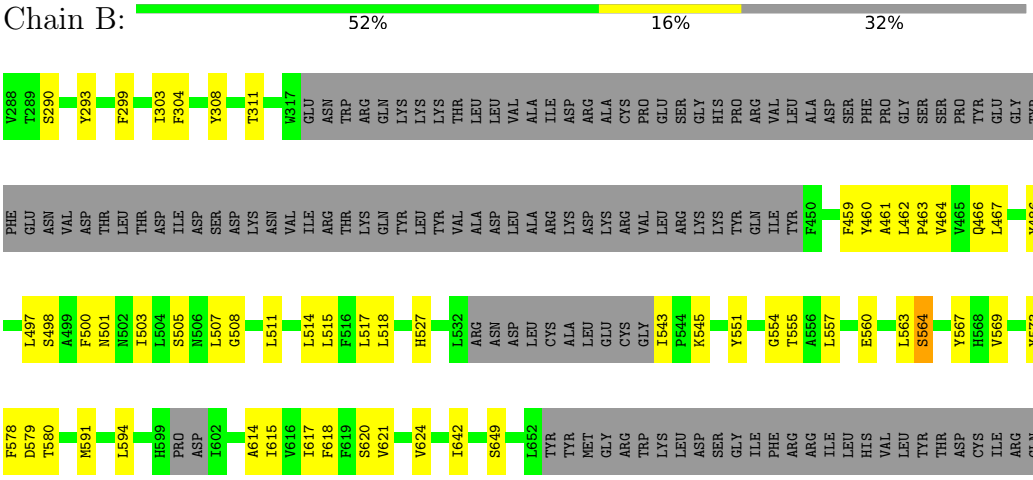
• Molecule 1: SID1 transmembrane family member 2

Chain A:



• Molecule 1: SID1 transmembrane family member 2

Chain B:




LEU TYR V686 L691 L692 W700 F714 L718 I734 K737 L738 I744 C751 I752 V753 V757 V758 W759 Q768 G769 L770 R785 L789 D795 H796 S803 A806 F811 L812 V813 T816 L817 L821 ASP THR VAL GLN ARG ASP LYS ILE TYR
VAL PHE ASP TYR LYS ASP HIS ASP GLY ASP TYR LYS ASP HIS ASP ILE ASP TYR LYS ASP ASP ASP ASP LYS

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	67365	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	60	Depositor
Minimum defocus (nm)	1200	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	0.34	0/2864	0.47	0/3898
1	B	0.34	0/2864	0.47	0/3898
All	All	0.34	0/5728	0.47	0/7796

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	2796	0	2801	59	0
1	B	2796	0	2801	58	0
All	All	5592	0	5602	110	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 10.

All (110) 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:621:VAL:HA	1:A:624:VAL:HG22	1.71	0.72
1:B:621:VAL:HA	1:B:624:VAL:HG22	1.71	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:621:VAL:HA	1:A:624:VAL:CG2	2.22	0.70
1:B:621:VAL:HA	1:B:624:VAL:CG2	2.22	0.69
1:A:467:LEU:HD11	1:B:467:LEU:HD11	1.77	0.65
1:A:459:PHE:HA	1:B:618:PHE:HE2	1.66	0.60
1:A:459:PHE:HE1	1:B:615:ILE:HG13	1.67	0.59
1:A:543:ILE:HD11	1:A:821:LEU:HD12	1.85	0.59
1:A:618:PHE:HE2	1:B:459:PHE:HA	1.67	0.59
1:B:543:ILE:HD11	1:B:821:LEU:HD12	1.85	0.58
1:A:770:LEU:HD11	1:A:795:ASP:HB2	1.86	0.58
1:B:770:LEU:HD11	1:B:795:ASP:HB2	1.86	0.58
1:A:615:ILE:HG13	1:B:459:PHE:HE1	1.67	0.58
1:A:621:VAL:CA	1:A:624:VAL:HG22	2.34	0.57
1:B:467:LEU:HB2	1:B:575:ASN:HD21	1.68	0.57
1:A:304:PHE:CZ	1:A:508:GLY:HA3	2.39	0.57
1:A:467:LEU:HB2	1:A:575:ASN:HD21	1.68	0.57
1:B:621:VAL:CA	1:B:624:VAL:HG22	2.34	0.56
1:A:500:PHE:HA	1:A:503:ILE:HD12	1.88	0.55
1:A:459:PHE:HA	1:B:618:PHE:CE2	2.40	0.55
1:A:308:TYR:CD1	1:A:515:LEU:HD12	2.42	0.55
1:A:618:PHE:CE2	1:B:459:PHE:HA	2.41	0.55
1:A:293:TYR:OH	1:A:493:PRO:O	2.21	0.54
1:A:620:SER:O	1:A:624:VAL:HG22	2.08	0.54
1:A:486:TYR:OH	1:A:569:VAL:O	2.23	0.54
1:B:737:LYS:HD3	1:B:744:ILE:HG13	1.90	0.54
1:B:500:PHE:HA	1:B:503:ILE:HD12	1.88	0.54
1:A:758:VAL:HG12	1:A:806:ALA:HB2	1.89	0.54
1:A:737:LYS:HD3	1:A:744:ILE:HG13	1.90	0.54
1:B:620:SER:O	1:B:624:VAL:HG22	2.08	0.53
1:A:753:VAL:O	1:A:757:VAL:HG12	2.09	0.53
1:B:501:ASN:O	1:B:505:SER:OG	2.26	0.53
1:B:758:VAL:HG12	1:B:806:ALA:HB2	1.89	0.53
1:B:753:VAL:O	1:B:757:VAL:HG12	2.08	0.53
1:B:308:TYR:CD2	1:B:515:LEU:HD12	2.44	0.52
1:A:501:ASN:O	1:A:505:SER:OG	2.26	0.52
1:B:563:LEU:HD21	1:B:578:PHE:HB3	1.92	0.52
1:A:620:SER:O	1:A:624:VAL:HG13	2.10	0.51
1:B:620:SER:O	1:B:624:VAL:HG13	2.10	0.51
1:A:311:THR:HG21	1:A:515:LEU:HD21	1.92	0.50
1:A:563:LEU:HD21	1:A:578:PHE:HB3	1.92	0.50
1:B:768:GLN:OE1	1:B:785:ARG:NH1	2.44	0.50
1:B:304:PHE:CZ	1:B:508:GLY:HA3	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:579:ASP:OD1	1:B:580:THR:N	2.46	0.48
1:B:614:ALA:HA	1:B:617:ILE:HD12	1.95	0.48
1:B:591:MET:HA	1:B:594:LEU:HD12	1.94	0.48
1:A:591:MET:HA	1:A:594:LEU:HD12	1.94	0.48
1:B:770:LEU:HD12	1:B:796:HIS:HB2	1.96	0.48
1:A:579:ASP:OD1	1:A:580:THR:N	2.47	0.48
1:B:734:ILE:O	1:B:738:LEU:N	2.41	0.48
1:A:770:LEU:HD12	1:A:796:HIS:HB2	1.96	0.48
1:B:642:ILE:HG12	1:B:700:TRP:CD1	2.49	0.48
1:A:514:LEU:HD23	1:A:518:LEU:HD11	1.96	0.48
1:B:514:LEU:HD23	1:B:518:LEU:HD11	1.96	0.47
1:A:517:LEU:HD21	1:A:554:GLY:HA3	1.96	0.47
1:B:486:TYR:OH	1:B:569:VAL:O	2.23	0.47
1:B:311:THR:HG21	1:B:515:LEU:HD21	1.97	0.47
1:A:557:LEU:HD22	1:A:811:PHE:HE1	1.80	0.47
1:A:642:ILE:HG12	1:A:700:TRP:CD1	2.49	0.47
1:B:293:TYR:OH	1:B:493:PRO:O	2.27	0.47
1:B:464:VAL:HG13	1:B:575:ASN:OD1	2.14	0.47
1:A:464:VAL:HG13	1:A:575:ASN:OD1	2.14	0.47
1:A:614:ALA:HA	1:A:617:ILE:HD12	1.95	0.47
1:A:768:GLN:OE1	1:A:785:ARG:NH1	2.44	0.47
1:B:517:LEU:HD21	1:B:554:GLY:HA3	1.96	0.46
1:B:497:LEU:HD13	1:B:503:ILE:HD13	1.98	0.46
1:B:557:LEU:HD22	1:B:811:PHE:HE2	1.80	0.46
1:A:812:LEU:O	1:A:816:THR:OG1	2.34	0.46
1:A:560:GLU:O	1:A:564:SER:HB2	2.16	0.46
1:A:462:LEU:O	1:A:466:GLN:HG2	2.16	0.45
1:B:560:GLU:O	1:B:564:SER:HB2	2.16	0.45
1:B:551:TYR:O	1:B:555:THR:HG22	2.17	0.45
1:A:299:PHE:CZ	1:A:303:ILE:HD11	2.52	0.45
1:B:462:LEU:O	1:B:466:GLN:HG2	2.16	0.45
1:A:461:ALA:HB2	1:A:563:LEU:HD22	1.98	0.45
1:A:551:TYR:O	1:A:555:THR:HG22	2.17	0.45
1:B:649:SER:HB3	1:B:692:LEU:HD13	1.99	0.45
1:A:497:LEU:HD13	1:A:503:ILE:HD13	1.98	0.45
1:B:461:ALA:HB2	1:B:563:LEU:HD22	1.98	0.45
1:B:812:LEU:O	1:B:816:THR:OG1	2.34	0.44
1:B:299:PHE:CZ	1:B:303:ILE:HD11	2.52	0.44
1:A:649:SER:HB3	1:A:692:LEU:HD13	1.99	0.43
1:A:507:LEU:O	1:A:511:LEU:HG	2.19	0.43
1:B:507:LEU:O	1:B:511:LEU:HG	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:290:SER:O	1:A:293:TYR:HB2	2.19	0.43
1:A:768:GLN:O	1:A:785:ARG:NH2	2.52	0.42
1:A:460:TYR:O	1:A:463:PRO:HD2	2.20	0.42
1:B:768:GLN:O	1:B:785:ARG:NH2	2.52	0.42
1:A:734:ILE:O	1:A:738:LEU:N	2.41	0.42
1:A:527:HIS:CE1	1:A:545:LYS:HD2	2.55	0.42
1:B:308:TYR:CE2	1:B:515:LEU:HD12	2.54	0.42
1:A:299:PHE:CE2	1:A:789:LEU:HD21	2.55	0.41
1:A:813:VAL:O	1:A:817:LEU:HB2	2.20	0.41
1:B:527:HIS:CE1	1:B:545:LYS:HD2	2.55	0.41
1:B:813:VAL:O	1:B:817:LEU:HB2	2.20	0.41
1:A:557:LEU:HD12	1:A:557:LEU:HA	1.83	0.41
1:B:299:PHE:CE1	1:B:789:LEU:HD21	2.55	0.41
1:A:308:TYR:CE1	1:A:515:LEU:HD12	2.56	0.41
1:B:290:SER:O	1:B:293:TYR:HB2	2.19	0.41
1:A:591:MET:O	1:A:594:LEU:HB2	2.20	0.41
1:B:591:MET:O	1:B:594:LEU:HB2	2.20	0.41
1:B:714:PHE:O	1:B:718:LEU:HD12	2.21	0.41
1:A:518:LEU:HD12	1:A:518:LEU:H	1.86	0.41
1:B:460:TYR:O	1:B:463:PRO:HD2	2.20	0.41
1:B:518:LEU:HD12	1:B:518:LEU:H	1.86	0.41
1:A:714:PHE:O	1:A:718:LEU:HD12	2.21	0.41
1:A:770:LEU:HD22	1:A:785:ARG:HG3	2.03	0.41
1:B:770:LEU:HD22	1:B:785:ARG:HG3	2.03	0.41
1:B:567:TYR:HE1	1:B:576:PHE:HA	1.86	0.40
1:A:567:TYR:HE2	1:A:576:PHE:HA	1.86	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	347/522 (66%)	344 (99%)	3 (1%)	0	100	100
1	B	347/522 (66%)	344 (99%)	3 (1%)	0	100	100
All	All	694/1044 (66%)	688 (99%)	6 (1%)	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	299/460 (65%)	290 (97%)	9 (3%)	36	62
1	B	299/460 (65%)	290 (97%)	9 (3%)	36	62
All	All	598/920 (65%)	580 (97%)	18 (3%)	37	62

All (18) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	490	CYS
1	A	498	SER
1	A	564	SER
1	A	573	TYR
1	A	691	LEU
1	A	718	LEU
1	A	751	CYS
1	A	759	TRP
1	A	803	SER
1	B	490	CYS
1	B	498	SER
1	B	564	SER
1	B	573	TYR
1	B	691	LEU
1	B	718	LEU
1	B	751	CYS
1	B	759	TRP
1	B	803	SER

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

There are no chain breaks in this entry.