WORLDWIDE PDB

PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report (i)

Jun 22, 2024 – 05:27 PM EDT

PDB ID	:	6R9P
Title	:	Structure of Saccharomyces cerevisiae apo Pan2 pseudoubiquitin hydrolase-RNA exonuclease (UCH-Exo) module in complex with AAUUAA RNA
Authors	:	Tang, T.T.L.; Stowell, J.A.W.; Hill, C.H.; Passmore, L.A.
Deposited on	:	2019-04-03
Resolution	:	2.98 Å(reported)

The following versions of software and data (see references (i)) were used in the production of this report:

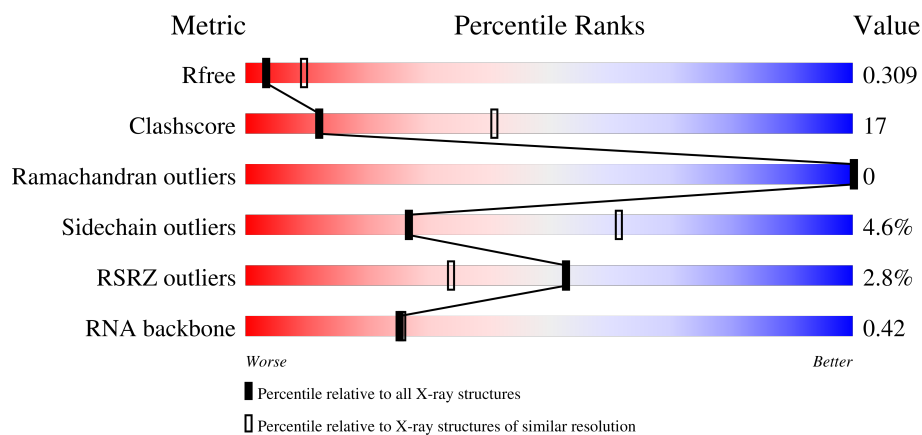|		
MolProbity	:	4.02b-467
Xtriage (Phenix)	:	1.20.1
EDS	:	2.37.1
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.37.1

1 Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:
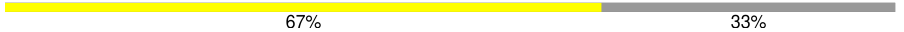*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.98 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		0.309
Clashscore		17
Ramachandran outliers		0
Sidechain outliers		4.6%
RSRZ outliers		2.8%
RNA backbone		0.42

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}	130704	2754 (3.00-2.96)
Clashscore	141614	3103 (3.00-2.96)
Ramachandran outliers	138981	2993 (3.00-2.96)
Sidechain outliers	138945	2996 (3.00-2.96)
RSRZ outliers	127900	2644 (3.00-2.96)
RNA backbone	3102	1088 (3.26-2.70)

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	A	672	3% / 62% / 27% / • / 10%
2	B	6	67% / 33%

2 Entry composition ⓘ

There are 2 unique types of molecules in this entry. The entry contains 4631 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 PAN2-PAN3 deadenylation complex catalytic subunit PAN2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	607	Total 4550	C 2900	N 751	O 882	S 17	0	0	0

There are 18 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	444	MET	-	initiating methionine	UNP P53010
A	445	HIS	-	expression tag	UNP P53010
A	446	HIS	-	expression tag	UNP P53010
A	447	HIS	-	expression tag	UNP P53010
A	448	HIS	-	expression tag	UNP P53010
A	449	HIS	-	expression tag	UNP P53010
A	450	HIS	-	expression tag	UNP P53010
A	451	HIS	-	expression tag	UNP P53010
A	452	HIS	-	expression tag	UNP P53010
A	453	LEU	-	expression tag	UNP P53010
A	454	GLU	-	expression tag	UNP P53010
A	455	VAL	-	expression tag	UNP P53010
A	456	LEU	-	expression tag	UNP P53010
A	457	PHE	-	expression tag	UNP P53010
A	458	GLN	-	expression tag	UNP P53010
A	459	GLY	-	expression tag	UNP P53010
A	460	PRO	-	expression tag	UNP P53010
A	912	ALA	GLU	engineered mutation	UNP P53010

- Molecule 2 is a RNA chain called AAUUAA RNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	4	Total 81	C 38	N 14	O 26	P 3	0	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: PAN2-PAN3 deadenylation complex catalytic subunit PAN2
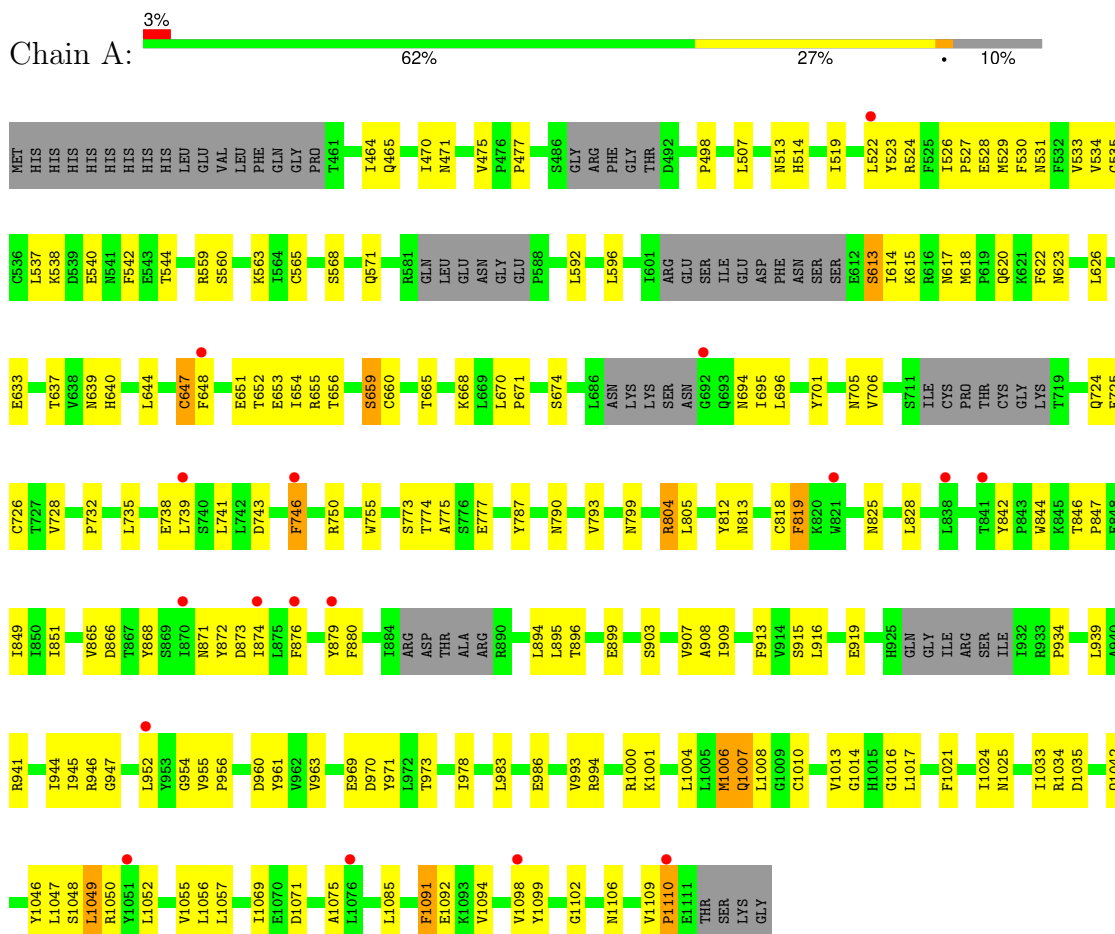
• Molecule 2: AAUUAA RNA

4 Data and refinement statistics (i)

Property	Value	Source
Space group	I 2 2 2	Depositor
Cell constants a, b, c, α, β, γ	91.89Å 117.09Å 255.89Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	86.48 – 2.98 86.48 – 2.98	Depositor EDS
% Data completeness (in resolution range)	99.8 (86.48-2.98) 99.8 (86.48-2.98)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.27 (at 2.96Å)	Xtriage
Refinement program	PHENIX 1.14_3260	Depositor
R, R_{free}	0.261 , 0.309 0.273 , 0.309	Depositor DCC
R_{free} test set	1461 reflections (5.11%)	wwPDB-VP
Wilson B-factor (Å^2)	113.4	Xtriage
Anisotropy	0.450	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.30 , 109.8	EDS
L-test for twinning[2]	$< |L| > = 0.49, < L^2 > = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.92	EDS
Total number of atoms	4631	wwPDB-VP
Average B, all atoms (Å^2)	133.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.57% 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	A	0.29	0/4645	0.53	1/6351 (0.0%)
2	B	0.14	0/90	0.65	0/138
All	All	0.29	0/4735	0.54	1/6489 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1110	PRO	CA-N-CD	-8.66	99.37	111.50

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	4550	0	4096	149	0
2	B	81	0	44	2	0
All	All	4631	0	4140	150	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 17.

All (150) 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:1109:VAL:CG1	1:A:1110:PRO:HD3	1.30	1.58
1:A:1109:VAL:HG12	1:A:1110:PRO:CD	1.31	1.57
1:A:907:VAL:HG12	1:A:947:GLY:H	1.35	0.91
1:A:1109:VAL:HG12	1:A:1110:PRO:HD2	1.53	0.90
1:A:1109:VAL:HG13	1:A:1110:PRO:HD3	1.54	0.86
1:A:971:TYR:HD2	1:A:978:ILE:HD13	1.40	0.85
1:A:790:ASN:HB3	1:A:851:ILE:HD11	1.61	0.83
1:A:523:TYR:HB3	1:A:529:MET:HE1	1.61	0.82
1:A:560:SER:HB3	1:A:563:LYS:HB3	1.63	0.81
1:A:1091:PHE:HD1	1:A:1092:GLU:H	1.28	0.78
1:A:1017:LEU:HB2	1:A:1033:ILE:HD11	1.66	0.77
1:A:655:ARG:O	1:A:725:GLU:N	2.21	0.72
1:A:945:ILE:HA	1:A:956:PRO:HA	1.70	0.72
1:A:1085:LEU:HD13	1:A:1094:VAL:HG21	1.72	0.72
1:A:880:PHE:HA	1:A:993:VAL:HG12	1.72	0.71
1:A:529:MET:HG3	1:A:644:LEU:HD21	1.72	0.71
1:A:559:ARG:HH22	1:A:1007:GLN:NE2	1.92	0.68
1:A:652:THR:O	1:A:654:ILE:HD12	1.94	0.68
1:A:513:ASN:OD1	1:A:571:GLN:NE2	2.28	0.67
1:A:825:ASN:HB3	1:A:828:LEU:HB3	1.76	0.67
1:A:960:ASP:OD1	1:A:1001:LYS:NZ	2.27	0.66
1:A:971:TYR:CD2	1:A:978:ILE:HD13	2.28	0.66
1:A:614:ILE:HD11	1:A:618:MET:HB3	1.78	0.65
1:A:656:THR:HG22	1:A:724:GLN:HG3	1.78	0.65
1:A:978:ILE:HD12	1:A:978:ILE:O	1.97	0.65
1:A:519:ILE:HD13	1:A:622:PHE:HD2	1.60	0.64
1:A:652:THR:HG21	1:A:670:LEU:HD12	1.81	0.62
1:A:1110:PRO:HD2	1:A:1110:PRO:O	2.00	0.62
1:A:909:ILE:HD13	1:A:944:ILE:HG12	1.82	0.62
1:A:1109:VAL:CG1	1:A:1110:PRO:CD	2.20	0.61
1:A:750:ARG:HH21	1:A:846:THR:HG22	1.64	0.61
1:A:1014:GLY:HA3	1:A:1017:LEU:HD21	1.81	0.61
1:A:530:PHE:O	1:A:534:VAL:HG22	2.01	0.61
1:A:1048:SER:O	1:A:1052:LEU:HD13	2.00	0.61
1:A:523:TYR:OH	1:A:623:ASN:OD1	2.19	0.60
1:A:523:TYR:CB	1:A:529:MET:HE1	2.29	0.60
1:A:537:LEU:O	1:A:1000:ARG:NH1	2.35	0.60
1:A:544:THR:OG1	1:A:633:GLU:HB3	2.01	0.60
1:A:939:LEU:HD13	1:A:1024:ILE:HG22	1.82	0.60
1:A:1013:VAL:HG12	1:A:1034:ARG:HB2	1.83	0.60
1:A:654:ILE:HD12	1:A:654:ILE:N	2.16	0.60
1:A:1052:LEU:HA	1:A:1055:VAL:HG12	1.83	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1109:VAL:HG12	1:A:1110:PRO:HD3	0.60	0.59
1:A:1046:TYR:O	2:B:3:U:O2'	2.21	0.58
1:A:652:THR:O	1:A:654:ILE:CD1	2.52	0.58
1:A:946:ARG:HH11	1:A:955:VAL:HG23	1.68	0.58
1:A:739:LEU:HD21	1:A:741:LEU:HG	1.84	0.58
1:A:620:GLN:HB3	1:A:738:GLU:HB3	1.84	0.58
1:A:919:GLU:HA	1:A:934:PRO:HB3	1.86	0.57
1:A:804:ARG:HH21	1:A:804:ARG:HB3	1.68	0.57
1:A:915:SER:HB3	1:A:970:ASP:HB3	1.87	0.57
1:A:945:ILE:HG22	1:A:956:PRO:HB3	1.86	0.56
1:A:465:GLN:HG2	1:A:828:LEU:HD21	1.86	0.56
1:A:946:ARG:O	1:A:954:GLY:N	2.39	0.56
1:A:540:GLU:HB2	1:A:542:PHE:CZ	2.41	0.55
1:A:874:ILE:HD11	1:A:1004:LEU:HD12	1.89	0.55
1:A:535:GLY:O	1:A:538:LYS:HG3	2.07	0.54
1:A:894:LEU:HD23	1:A:895:LEU:O	2.07	0.54
1:A:614:ILE:HG21	1:A:805:LEU:HD11	1.89	0.54
1:A:739:LEU:HD13	1:A:847:PRO:HG2	1.89	0.54
1:A:773:SER:O	1:A:774:THR:OG1	2.22	0.54
1:A:813:ASN:HB3	1:A:818:CYS:SG	2.47	0.54
1:A:559:ARG:HH22	1:A:1007:GLN:HE22	1.55	0.54
1:A:790:ASN:HB3	1:A:851:ILE:CD1	2.36	0.54
1:A:1048:SER:OG	1:A:1049:LEU:N	2.40	0.53
1:A:526:ILE:HD11	1:A:851:ILE:HD13	1.90	0.53
1:A:871:ASN:O	1:A:1000:ARG:NH2	2.42	0.53
2:B:4:U:H3'	2:B:5:A:C8	2.44	0.53
1:A:654:ILE:HG23	1:A:724:GLN:OE1	2.09	0.53
1:A:963:VAL:HG22	1:A:994:ARG:HA	1.90	0.52
1:A:1008:LEU:HD11	1:A:1010:CYS:SG	2.50	0.52
1:A:470:ILE:HD12	1:A:471:ASN:N	2.25	0.52
1:A:623:ASN:HB2	1:A:849:ILE:HD13	1.91	0.52
1:A:866:ASP:HB3	1:A:1007:GLN:OE1	2.10	0.51
1:A:596:LEU:HD23	1:A:596:LEU:O	2.11	0.51
1:A:941:ARG:NH1	1:A:961:TYR:OH	2.44	0.51
1:A:529:MET:O	1:A:533:VAL:HG23	2.10	0.51
1:A:946:ARG:HD2	1:A:952:LEU:HB3	1.93	0.51
1:A:701:TYR:O	1:A:705:ASN:HB3	2.11	0.50
1:A:1016:GLY:N	1:A:1035:ASP:OD1	2.42	0.50
1:A:528:GLU:OE2	1:A:647:CYS:HB3	2.12	0.50
1:A:743:ASP:HA	1:A:746:PHE:HB2	1.94	0.50
1:A:842:TYR:HB3	1:A:844:TRP:CE2	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:659:SER:OG	1:A:660:CYS:N	2.45	0.50
1:A:804:ARG:HB3	1:A:804:ARG:NH2	2.27	0.50
1:A:706:VAL:HG12	1:A:725:GLU:HA	1.94	0.50
1:A:946:ARG:HH11	1:A:946:ARG:HG3	1.75	0.49
1:A:973:THR:HG23	1:A:978:ILE:HD12	1.94	0.49
1:A:639:ASN:O	1:A:639:ASN:ND2	2.45	0.48
1:A:915:SER:C	1:A:916:LEU:HD23	2.33	0.48
1:A:973:THR:HG22	1:A:978:ILE:H	1.77	0.48
1:A:739:LEU:CD2	1:A:741:LEU:HG	2.42	0.48
1:A:973:THR:HG22	1:A:978:ILE:N	2.29	0.48
1:A:614:ILE:HD12	1:A:615:LYS:H	1.78	0.47
1:A:874:ILE:HD13	1:A:1001:LYS:HG2	1.96	0.47
1:A:696:LEU:H	1:A:696:LEU:HD22	1.79	0.47
1:A:654:ILE:O	1:A:665:THR:HA	2.15	0.47
1:A:945:ILE:HD12	1:A:954:GLY:HA2	1.97	0.47
1:A:559:ARG:NH1	1:A:1006:MET:SD	2.89	0.46
1:A:1056:LEU:O	1:A:1057:LEU:HG	2.16	0.46
1:A:647:CYS:O	1:A:732:PRO:HB2	2.15	0.46
1:A:735:LEU:HD11	1:A:787:TYR:CZ	2.51	0.46
1:A:907:VAL:HB	1:A:945:ILE:O	2.16	0.46
1:A:648:PHE:O	1:A:671:PRO:HA	2.15	0.45
1:A:507:LEU:HD23	1:A:565:CYS:HB2	1.97	0.45
1:A:637:THR:OG1	1:A:640:HIS:HA	2.17	0.45
1:A:913:PHE:HB3	1:A:939:LEU:HA	1.97	0.45
1:A:983:LEU:CD1	1:A:986:GLU:H	2.29	0.45
1:A:1042:GLN:HB3	1:A:1099:TYR:CE2	2.52	0.45
1:A:617:ASN:HA	1:A:620:GLN:OE1	2.17	0.45
1:A:1052:LEU:HD12	1:A:1052:LEU:N	2.32	0.45
1:A:522:LEU:HD22	1:A:793:VAL:HG23	1.99	0.44
1:A:526:ILE:HG22	1:A:529:MET:H	1.82	0.44
1:A:896:THR:O	1:A:899:GLU:N	2.45	0.44
1:A:651:GLU:O	1:A:728:VAL:HA	2.17	0.44
1:A:941:ARG:HH21	1:A:1069:ILE:HG23	1.83	0.44
1:A:1102:GLY:O	1:A:1106:ASN:N	2.51	0.44
1:A:464:ILE:HA	1:A:477:PRO:HB2	1.99	0.44
1:A:812:TYR:HB2	1:A:819:PHE:HE1	1.83	0.44
1:A:969:GLU:HG3	1:A:970:ASP:N	2.31	0.43
1:A:1110:PRO:CD	1:A:1110:PRO:O	2.66	0.43
1:A:1021:PHE:HA	1:A:1024:ILE:HG12	2.00	0.43
1:A:1098:VAL:O	1:A:1102:GLY:N	2.52	0.43
1:A:592:LEU:H	1:A:592:LEU:HD12	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1021:PHE:HE2	1:A:1033:ILE:HD12	1.83	0.42
1:A:1048:SER:OG	1:A:1050:ARG:N	2.52	0.42
1:A:465:GLN:NE2	1:A:498:PRO:O	2.39	0.42
1:A:537:LEU:HB2	1:A:865:VAL:HG21	2.00	0.42
1:A:1013:VAL:C	1:A:1017:LEU:HD11	2.40	0.42
1:A:514:HIS:CD2	1:A:613:SER:HB3	2.55	0.42
1:A:1047:LEU:CB	1:A:1052:LEU:HD11	2.49	0.42
1:A:775:ALA:O	1:A:777:GLU:N	2.51	0.42
1:A:653:GLU:O	1:A:726:CYS:HA	2.19	0.42
1:A:908:ALA:HB3	1:A:945:ILE:HG12	2.02	0.41
1:A:946:ARG:HG3	1:A:946:ARG:NH1	2.35	0.41
1:A:1042:GLN:N	1:A:1042:GLN:OE1	2.54	0.41
1:A:475:VAL:HG12	1:A:799:ASN:OD1	2.20	0.41
1:A:773:SER:C	1:A:775:ALA:H	2.23	0.41
1:A:913:PHE:HA	1:A:939:LEU:HA	2.01	0.41
1:A:871:ASN:OD1	1:A:873:ASP:HB2	2.21	0.41
1:A:913:PHE:CB	1:A:939:LEU:HA	2.50	0.41
1:A:983:LEU:HD12	1:A:986:GLU:H	1.86	0.41
1:A:1014:GLY:HA2	1:A:1075:ALA:HB1	2.02	0.41
1:A:652:THR:OG1	1:A:668:LYS:O	2.34	0.41
1:A:872:TYR:HA	1:A:1004:LEU:HD13	2.03	0.41
1:A:1091:PHE:HD1	1:A:1092:GLU:N	2.06	0.41
1:A:527:PRO:O	1:A:531:ASN:ND2	2.54	0.41
1:A:655:ARG:HB3	1:A:725:GLU:CB	2.51	0.40
1:A:695:ILE:HA	1:A:755:TRP:CZ2	2.57	0.40
1:A:523:TYR:CG	1:A:529:MET:HE1	2.56	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	A	591/672 (88%)	540 (91%)	51 (9%)	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 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	A	456/617 (74%)	435 (95%)	21 (5%)	27	61

All (21) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	524	ARG
1	A	568	SER
1	A	613	SER
1	A	626	LEU
1	A	647	CYS
1	A	659	SER
1	A	674	SER
1	A	694	ASN
1	A	746	PHE
1	A	804	ARG
1	A	819	PHE
1	A	868	TYR
1	A	876	PHE
1	A	879	TYR
1	A	903	SER
1	A	1006	MET
1	A	1007	GLN
1	A	1025	ASN
1	A	1049	LEU
1	A	1071	ASP
1	A	1091	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	996	ASN
1	A	1007	GLN

5.3.3   RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
2	B	3/6 (50%)	1 (33%)	0

All (1) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
2	B	6	A

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 monosaccharides in this entry.

5.6   Ligand geometry (i)

There are no ligands in this entry.

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.

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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(Å²)	Q<0.9
1	A	607/672 (90%)	0.14	17 (2%)	53	34	66, 131, 191, 228	0
2	B	4/6 (66%)	-0.13	0	100	100	246, 250, 267, 273	0
All	All	611/678 (90%)	0.14	17 (2%)	53	34	66, 131, 194, 273	0

All (17) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	692	GLY	2.7
1	A	739	LEU	2.7
1	A	648	PHE	2.6
1	A	879	TYR	2.6
1	A	1098	VAL	2.5
1	A	876	PHE	2.4
1	A	874	ILE	2.4
1	A	821	TRP	2.4
1	A	841	THR	2.4
1	A	952	LEU	2.3
1	A	522	LEU	2.2
1	A	838	LEU	2.2
1	A	870	ILE	2.2
1	A	1110	PRO	2.2
1	A	746	PHE	2.1
1	A	1051	TYR	2.1
1	A	1076	LEU	2.0

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.