WORLDWIDE PDB
PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report (i)

Aug 6, 2023 – 04:22 PM EDT

PDB ID	:	1L2U
Title	:	Orotidine 5'-monophosphate decarboxylase from E. coli
Authors	:	Harris, P.; Poulsen, J.C.; Jensen, K.F.; Larsen, S.
Deposited on	:	2002-02-25
Resolution	:	2.50 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)	:	1.13
EDS	:	2.35
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)	:	2.35
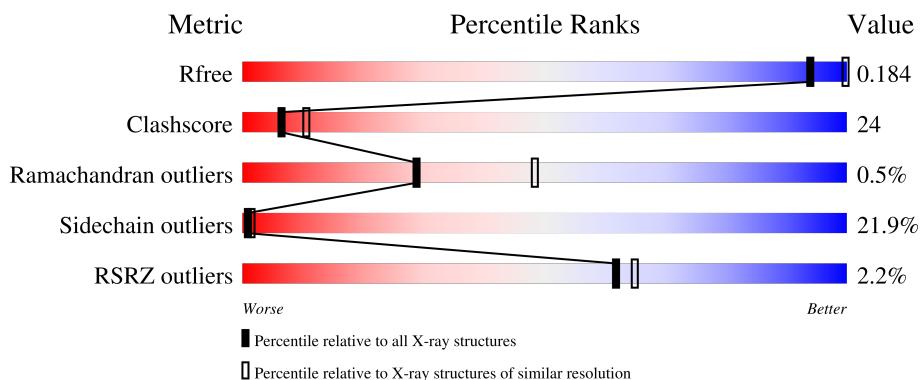
1   Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION
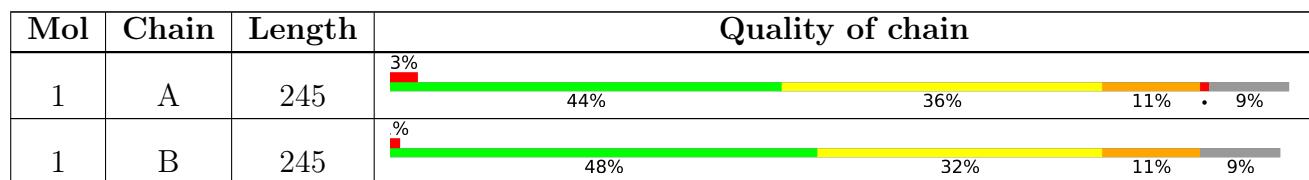
The reported resolution of this entry is 2.50 Å.

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		0.184
Clashscore		24
Ramachandran outliers		0.5%
Sidechain outliers		21.9%
RSRZ outliers		2.2%

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	4661 (2.50-2.50)
Clashscore	141614	5346 (2.50-2.50)
Ramachandran outliers	138981	5231 (2.50-2.50)
Sidechain outliers	138945	5233 (2.50-2.50)
RSRZ outliers	127900	4559 (2.50-2.50)

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	245	3% 44% 36% 11% · 9%
1	B	245	.% 48% 32% 11% 9%

2 Entry composition ⓘ

There are 2 unique types of molecules in this entry. The entry contains 3512 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 Orotidine 5'-phosphate decarboxylase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	224	Total	C	N	O	S	0	0	0
			1698	1077	295	315	11			
1	B	223	Total	C	N	O	S	0	0	0
			1693	1074	294	314	11			
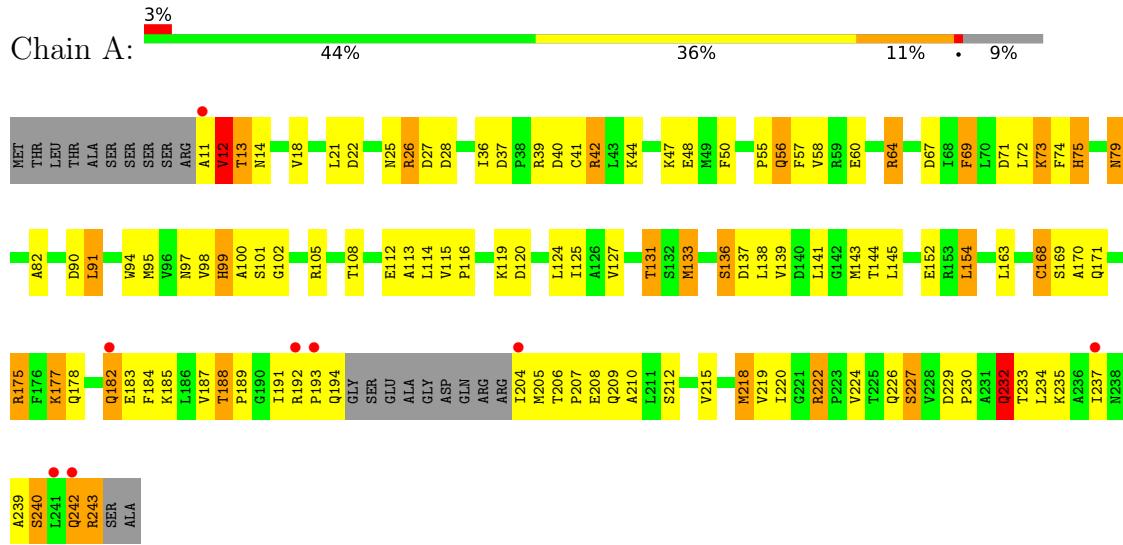
- Molecule 2 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	54	Total	O	0	0
			54	54		
2	B	67	Total	O	0	0
			67	67		
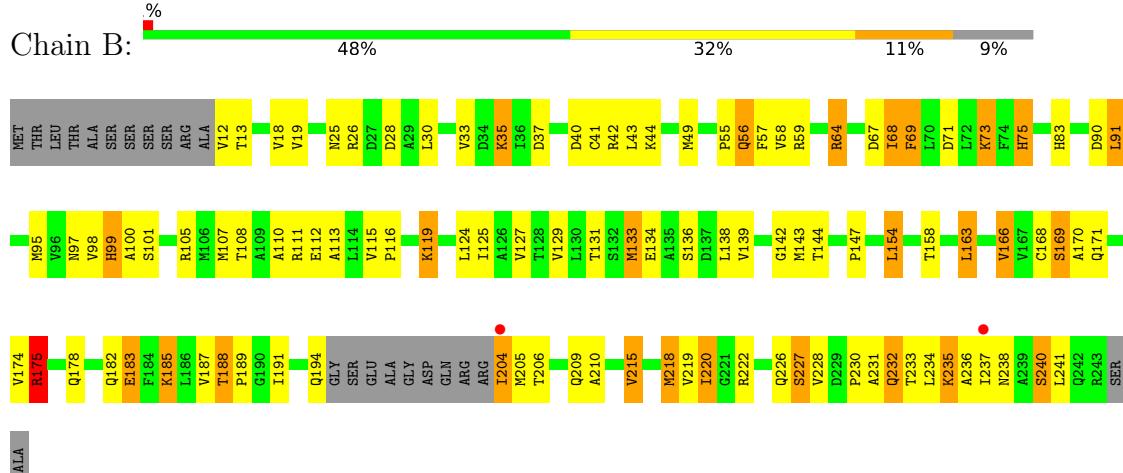
3 Residue-property plots ⓘ

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: Orotidine 5'-phosphate decarboxylase

• Molecule 1: Orotidine 5'-phosphate decarboxylase

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 32 2 1	Depositor
Cell constants a, b, c, α, β, γ	142.69Å 142.69Å 105.37Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	15.00 – 2.50 14.94 – 2.50	Depositor EDS
% Data completeness (in resolution range)	(Not available) (15.00-2.50) 97.4 (14.94-2.50)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.09	Depositor
$< I/\sigma(I) >$ [1]	3.33 (at 2.51Å)	Xtriage
Refinement program	SHELXL-97	Depositor
R, R_{free}	0.159 , 0.211 0.144 , 0.184	Depositor DCC
R_{free} test set	2063 reflections (4.87%)	wwPDB-VP
Wilson B-factor (Å^2)	37.4	Xtriage
Anisotropy	0.394	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.36 , 72.8	EDS
L-test for twinning[2]	$< \lvert L \rvert > = 0.40, < L^2 > = 0.23$	Xtriage
Estimated twinning fraction	0.409 for -h,-k,l	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	3512	wwPDB-VP
Average B, all atoms (Å^2)	46.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.01% 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 $< \lvert L \rvert >$, $< L^2 >$ 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	0.35	0/1728	1.09	5/2346 (0.2%)
1	B	0.36	0/1723	1.10	5/2339 (0.2%)
All	All	0.36	0/3451	1.10	10/4685 (0.2%)

There are no bond length outliers.

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	64	ARG	NE-CZ-NH1	7.24	123.92	120.30
1	A	69	PHE	CB-CG-CD1	7.04	125.73	120.80
1	A	42	ARG	NE-CZ-NH1	-6.34	117.13	120.30
1	B	175	ARG	CD-NE-CZ	5.78	131.69	123.60
1	B	69	PHE	CB-CG-CD1	5.73	124.81	120.80
1	A	64	ARG	NE-CZ-NH1	5.68	123.14	120.30
1	A	232	GLN	CA-CB-CG	5.49	125.48	113.40
1	B	98	VAL	CA-CB-CG1	5.32	118.88	110.90
1	B	166	VAL	CA-CB-CG2	-5.07	103.29	110.90
1	A	69	PHE	CB-CG-CD2	-5.06	117.25	120.80

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	1698	0	1715	88	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	B	1693	0	1710	81	0
2	A	54	0	0	3	0
2	B	67	0	0	7	0
All	All	3512	0	3425	163	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 24.

All (163) 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:124:LEU:HG	1:A:163:LEU:HD13	1.55	0.88
1:B:25:ASN:HD22	1:B:28:ASP:H	1.17	0.87
1:B:124:LEU:HG	1:B:163:LEU:HD13	1.60	0.83
1:A:73:LYS:HD3	1:A:127:VAL:HG21	1.61	0.82
1:B:56:GLN:HE21	1:B:56:GLN:H	1.26	0.81
1:A:25:ASN:HD21	1:A:27:ASP:HB2	1.44	0.81
1:B:232:GLN:O	1:B:235:LYS:HD2	1.83	0.79
1:A:184:PHE:HB3	2:A:1096:HOH:O	1.86	0.75
1:B:206:THR:OG1	1:B:209:GLN:HG3	1.86	0.75
1:A:41:CYS:HB3	1:A:234:LEU:HD21	1.71	0.73
1:A:240:SER:O	1:A:243:ARG:HD2	1.90	0.71
1:B:44:LYS:HE3	1:B:71:ASP:OD2	1.90	0.71
1:A:177:LYS:HE3	1:A:182:GLN:NE2	2.06	0.71
1:A:239:ALA:O	1:A:242:GLN:HB2	1.92	0.70
1:A:210:ALA:O	1:A:215:VAL:HG13	1.92	0.69
1:B:73:LYS:HD3	1:B:127:VAL:HG21	1.74	0.68
1:B:42:ARG:HG2	1:B:67:ASP:HB2	1.76	0.68
1:A:25:ASN:HD22	1:A:28:ASP:H	1.38	0.68
1:A:75:HIS:HD2	1:B:75:HIS:HD2	1.42	0.67
1:A:25:ASN:ND2	1:A:28:ASP:H	1.93	0.67
1:A:170:ALA:HB1	1:A:205:MET:SD	2.35	0.66
1:A:233:THR:O	1:A:237:ILE:HG12	1.95	0.66
1:B:64:ARG:HH11	1:B:64:ARG:HG3	1.60	0.66
1:B:232:GLN:HA	1:B:235:LYS:HZ2	1.61	0.66
1:B:56:GLN:H	1:B:56:GLN:NE2	1.94	0.64
1:B:210:ALA:O	1:B:215:VAL:HG13	1.97	0.64
1:B:25:ASN:ND2	1:B:28:ASP:H	1.92	0.62
1:A:229:ASP:O	1:A:232:GLN:HG3	1.98	0.62
1:A:37:ASP:OD1	1:A:39:ARG:HG2	2.00	0.62
1:B:133:MET:HG2	2:B:1041:HOH:O	2.00	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:168:CYS:O	1:B:188:THR:HB	2.00	0.61
1:A:224:VAL:O	1:A:227:SER:HB3	2.00	0.60
1:B:26:ARG:HG2	1:B:57:PHE:CD1	2.36	0.60
1:A:41:CYS:SG	1:A:234:LEU:HD21	2.41	0.60
1:B:37:ASP:O	1:B:40:ASP:HB2	2.02	0.60
1:A:168:CYS:O	1:A:188:THR:HB	2.02	0.59
1:B:69:PHE:CG	1:B:95:MET:HE2	2.37	0.59
1:A:69:PHE:CG	1:A:95:MET:HE2	2.38	0.59
1:B:158:THR:HG22	1:B:163:LEU:HB2	1.84	0.59
1:A:131:THR:HG21	1:A:189:PRO:HG2	1.85	0.59
1:A:42:ARG:HG2	1:A:67:ASP:HB2	1.85	0.59
1:A:41:CYS:CB	1:A:234:LEU:HD21	2.33	0.59
1:A:191:ILE:HG13	1:A:218:MET:CB	2.33	0.58
1:B:175:ARG:HG3	1:B:175:ARG:HH11	1.69	0.57
1:A:239:ALA:HA	1:A:242:GLN:OE1	2.04	0.57
1:B:44:LYS:HE2	2:B:1027:HOH:O	2.05	0.57
1:A:99:HIS:HE1	1:B:75:HIS:O	1.88	0.57
1:A:136:SER:O	1:A:139:VAL:HG23	2.05	0.56
1:B:58:VAL:HG11	1:B:91:LEU:HD13	1.88	0.56
1:B:183:GLU:HA	1:B:183:GLU:OE1	2.06	0.56
1:A:39:ARG:HG3	1:A:40:ASP:OD1	2.06	0.56
1:A:206:THR:HB	1:A:208:GLU:OE2	2.06	0.55
1:A:206:THR:OG1	1:A:209:GLN:HG3	2.05	0.55
1:B:230:PRO:O	1:B:233:THR:HB	2.06	0.55
1:B:18:VAL:O	1:B:219:VAL:HA	2.05	0.55
1:B:43:LEU:HB2	1:B:68:ILE:HD12	1.87	0.55
1:B:42:ARG:HG2	1:B:67:ASP:CB	2.37	0.55
1:A:39:ARG:HG3	1:A:40:ASP:N	2.22	0.54
1:B:232:GLN:HA	1:B:235:LYS:NZ	2.21	0.54
1:A:75:HIS:O	1:B:99:HIS:HE1	1.91	0.54
1:B:232:GLN:HB2	1:B:235:LYS:HZ3	1.72	0.54
1:B:107:MET:O	1:B:110:ALA:HB3	2.08	0.54
1:B:108:THR:O	1:B:112:GLU:HG3	2.08	0.53
1:B:169:SER:OG	1:B:171:GLN:HG2	2.08	0.53
1:A:58:VAL:HG11	1:A:91:LEU:HD13	1.91	0.52
1:B:30:LEU:HA	1:B:33:VAL:HB	1.91	0.52
1:B:227:SER:OG	1:B:230:PRO:HA	2.09	0.52
1:A:74:PHE:HB2	1:A:98:VAL:HG12	1.92	0.51
1:A:112:GLU:HA	1:A:115:VAL:HG23	1.92	0.51
1:B:99:HIS:HD2	2:B:1074:HOH:O	1.92	0.51
1:A:175:ARG:HA	1:A:178:GLN:HE21	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:59:ARG:HD2	2:B:1110:HOH:O	2.10	0.51
1:B:69:PHE:CD2	1:B:95:MET:HE2	2.45	0.51
1:A:191:ILE:HG13	1:A:218:MET:HB2	1.92	0.51
1:A:204:ILE:O	1:A:204:ILE:HG22	2.10	0.51
1:B:204:ILE:HG22	1:B:204:ILE:O	2.10	0.51
1:B:218:MET:HE1	1:B:241:LEU:HD21	1.91	0.51
1:A:21:LEU:O	1:A:22:ASP:OD1	2.30	0.50
1:A:44:LYS:HD2	1:A:71:ASP:HB2	1.94	0.50
1:B:218:MET:HE2	1:B:241:LEU:HD11	1.94	0.49
1:A:192:ARG:NH1	1:A:204:ILE:HD13	2.27	0.49
1:A:36:ILE:HD12	1:A:41:CYS:SG	2.52	0.49
1:B:44:LYS:HG3	1:B:69:PHE:CD2	2.48	0.49
1:A:26:ARG:HG2	1:A:57:PHE:CE1	2.48	0.48
1:A:192:ARG:NH2	1:A:204:ILE:HG12	2.28	0.48
1:A:18:VAL:O	1:A:219:VAL:HA	2.14	0.48
1:B:95:MET:HE1	1:B:187:VAL:HG21	1.95	0.48
1:B:174:VAL:O	1:B:178:GLN:HG3	2.14	0.47
1:B:236:ALA:O	1:B:240:SER:HB3	2.14	0.47
1:B:138:LEU:HD12	1:B:147:PRO:HG3	1.95	0.47
1:A:11:ALA:HB3	1:A:67:ASP:OD1	2.15	0.47
1:B:129:VAL:HA	2:B:1046:HOH:O	2.14	0.47
1:B:95:MET:CE	1:B:187:VAL:HG21	2.44	0.47
1:B:97:ASN:HA	1:B:125:ILE:O	2.14	0.47
1:B:64:ARG:HG3	1:B:64:ARG:NH1	2.30	0.47
1:B:170:ALA:HB1	1:B:205:MET:SD	2.55	0.46
1:A:44:LYS:HD2	1:A:71:ASP:CB	2.45	0.46
1:A:50:PHE:CZ	1:A:55:PRO:HD3	2.51	0.46
1:A:136:SER:HA	1:A:139:VAL:HG23	1.97	0.46
1:A:105:ARG:HH22	1:B:134:GLU:CD	2.18	0.46
1:A:97:ASN:HA	1:A:125:ILE:O	2.16	0.46
1:A:56:GLN:H	1:A:56:GLN:NE2	2.14	0.46
1:A:79:ASN:O	1:A:82:ALA:HB3	2.16	0.46
1:B:41:CYS:SG	1:B:234:LEU:HD21	2.56	0.46
1:A:137:ASP:OD1	1:B:105:ARG:NH1	2.49	0.46
1:A:222:ARG:HG2	1:A:226:GLN:CD	2.36	0.45
1:B:175:ARG:HG3	1:B:175:ARG:NH1	2.32	0.45
1:B:222:ARG:NH1	1:B:226:GLN:HE22	2.15	0.45
1:A:133:MET:HG2	2:A:1021:HOH:O	2.15	0.45
1:B:49:MET:HG3	2:B:1056:HOH:O	2.16	0.45
1:B:100:ALA:HB3	1:B:154:LEU:HG	1.99	0.45
1:B:185:LYS:NZ	2:B:1082:HOH:O	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:95:MET:CE	1:A:187:VAL:HG21	2.47	0.45
1:B:188:THR:HA	1:B:189:PRO:HD3	1.55	0.45
1:B:218:MET:CE	1:B:241:LEU:HD11	2.47	0.45
1:A:69:PHE:CD2	1:A:95:MET:HE2	2.52	0.44
1:A:133:MET:HE3	1:A:133:MET:HB3	1.78	0.44
1:B:119:LYS:HA	1:B:119:LYS:HD2	1.69	0.44
1:A:25:ASN:HD21	1:A:27:ASP:CB	2.23	0.44
1:A:177:LYS:NZ	1:A:184:PHE:O	2.50	0.44
1:A:47:LYS:NZ	1:A:72:LEU:O	2.50	0.44
1:A:113:ALA:O	1:A:116:PRO:HD2	2.17	0.44
1:A:192:ARG:HH12	1:A:204:ILE:HD13	1.82	0.44
1:A:100:ALA:HB3	1:A:154:LEU:HG	1.99	0.44
1:A:114:LEU:HD12	1:A:124:LEU:HD22	1.99	0.44
1:A:114:LEU:HA	1:A:114:LEU:HD23	1.75	0.44
1:B:169:SER:HG	1:B:171:GLN:HG2	1.83	0.44
1:A:206:THR:H	1:A:209:GLN:HB2	1.83	0.43
1:B:232:GLN:CB	1:B:235:LYS:HZ3	2.31	0.43
1:A:13:THR:OG1	1:A:14:ASN:N	2.51	0.43
1:B:69:PHE:CD1	1:B:95:MET:HE2	2.53	0.43
1:B:139:VAL:O	1:B:142:GLY:N	2.49	0.43
1:B:133:MET:HE3	1:B:133:MET:HB3	1.88	0.43
1:B:227:SER:O	1:B:230:PRO:HD3	2.19	0.43
1:A:207:PRO:HD2	1:A:208:GLU:OE2	2.18	0.43
1:B:115:VAL:HB	1:B:116:PRO:HD3	2.01	0.43
1:A:133:MET:HE3	1:A:138:LEU:HG	2.01	0.42
1:A:105:ARG:NH2	1:B:134:GLU:OE2	2.50	0.42
1:B:113:ALA:O	1:B:116:PRO:HD2	2.20	0.42
1:A:44:LYS:HB3	1:A:44:LYS:HE3	1.80	0.42
1:B:55:PRO:O	1:B:58:VAL:HB	2.19	0.42
1:B:191:ILE:HG13	1:B:218:MET:CB	2.50	0.42
1:A:108:THR:O	1:A:112:GLU:HG3	2.20	0.42
1:B:25:ASN:HB3	1:B:28:ASP:HB2	2.01	0.41
1:A:230:PRO:O	1:A:234:LEU:N	2.48	0.41
1:B:19:VAL:HA	1:B:220:ILE:O	2.20	0.41
1:B:233:THR:O	1:B:237:ILE:HG12	2.20	0.41
1:A:60:GLU:O	1:A:64:ARG:HG3	2.21	0.41
1:B:234:LEU:HD12	1:B:234:LEU:HA	1.74	0.41
1:A:42:ARG:HD3	1:A:94:TRP:CE3	2.55	0.41
1:A:97:ASN:OD1	1:A:97:ASN:N	2.52	0.41
1:A:227:SER:OG	1:A:230:PRO:HA	2.20	0.41
1:B:35:LYS:O	1:B:231:ALA:HB2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:141:LEU:N	1:A:141:LEU:HD23	2.36	0.41
1:A:222:ARG:HG2	1:A:226:GLN:NE2	2.36	0.40
1:A:44:LYS:HE2	1:A:219:VAL:HG11	2.04	0.40
1:A:69:PHE:CD1	1:A:95:MET:HE2	2.56	0.40
1:A:75:HIS:CE1	1:A:102:GLY:HA2	2.56	0.40
1:A:193:PRO:HA	1:A:207:PRO:HD2	2.03	0.40
1:A:12:VAL:HA	2:A:1035:HOH:O	2.22	0.40
1:A:37:ASP:HB3	1:A:40:ASP:OD2	2.22	0.40
1:A:222:ARG:O	1:A:226:GLN:N	2.49	0.40
1:B:111:ARG:HH11	1:B:111:ARG:HG2	1.87	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	220/245 (90%)	203 (92%)	15 (7%)	2 (1%)	17	31
1	B	219/245 (89%)	212 (97%)	7 (3%)	0	100	100
All	All	439/490 (90%)	415 (94%)	22 (5%)	2 (0%)	29	48

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	12	VAL
1	A	48	GLU

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	180/196 (92%)	139 (77%)	41 (23%)	1	1
1	B	180/196 (92%)	142 (79%)	38 (21%)	1	2
All	All	360/392 (92%)	281 (78%)	79 (22%)	1	1

All (79) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	12	VAL
1	A	13	THR
1	A	26	ARG
1	A	56	GLN
1	A	73	LYS
1	A	75	HIS
1	A	79	ASN
1	A	90	ASP
1	A	91	LEU
1	A	99	HIS
1	A	101	SER
1	A	119	LYS
1	A	120	ASP
1	A	131	THR
1	A	133	MET
1	A	136	SER
1	A	143	MET
1	A	144	THR
1	A	145	LEU
1	A	152	GLU
1	A	154	LEU
1	A	168	CYS
1	A	169	SER
1	A	171	GLN
1	A	175	ARG
1	A	177	LYS
1	A	182	GLN
1	A	183	GLU
1	A	185	LYS
1	A	188	THR
1	A	194	GLN
1	A	212	SER
1	A	218	MET

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Mol	Chain	Res	Type
1	A	220	ILE
1	A	222	ARG
1	A	227	SER
1	A	232	GLN
1	A	235	LYS
1	A	240	SER
1	A	242	GLN
1	A	243	ARG
1	B	12	VAL
1	B	13	THR
1	B	35	LYS
1	B	56	GLN
1	B	68	ILE
1	B	73	LYS
1	B	75	HIS
1	B	83	HIS
1	B	90	ASP
1	B	91	LEU
1	B	99	HIS
1	B	101	SER
1	B	119	LYS
1	B	131	THR
1	B	133	MET
1	B	136	SER
1	B	143	MET
1	B	144	THR
1	B	154	LEU
1	B	163	LEU
1	B	166	VAL
1	B	169	SER
1	B	175	ARG
1	B	182	GLN
1	B	183	GLU
1	B	185	LYS
1	B	188	THR
1	B	194	GLN
1	B	204	ILE
1	B	215	VAL
1	B	218	MET
1	B	220	ILE
1	B	227	SER
1	B	228	VAL

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Mol	Chain	Res	Type
1	B	232	GLN
1	B	235	LYS
1	B	238	ASN
1	B	240	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (13) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	25	ASN
1	A	56	GLN
1	A	75	HIS
1	A	99	HIS
1	A	178	GLN
1	A	182	GLN
1	A	226	GLN
1	B	25	ASN
1	B	56	GLN
1	B	75	HIS
1	B	99	HIS
1	B	178	GLN
1	B	182	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 monosaccharides in this entry.

5.6 Ligand geometry ⓘ

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.

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	224/245 (91%)	0.30	8 (3%)	42	46	22, 41, 87, 136	0
1	B	223/245 (91%)	0.22	2 (0%)	84	86	22, 40, 85, 136	0
All	All	447/490 (91%)	0.26	10 (2%)	62	65	22, 40, 87, 136	0

All (10) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	11	ALA	4.2
1	A	193	PRO	3.0
1	B	204	ILE	3.0
1	A	204	ILE	2.8
1	A	241	LEU	2.5
1	A	192	ARG	2.4
1	A	242	GLN	2.4
1	B	237	ILE	2.3
1	A	182	GLN	2.1
1	A	237	ILE	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.