WORLDWIDE wwPDB PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report (i)

Oct 14, 2023 – 06:18 PM EDT

PDB ID	:	7R80
Title	:	Crystal structure of C3 TCR complex with QW9-bound HLA-B*5301
Authors	:	Li, X.L.; Tan, K.M.; Walker, B.D.; Wang, J.H.
Deposited on	:	2021-06-25
Resolution	:	2.90 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	:	2.36
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)	:	2.36

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 2.90 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	Percentile Ranks	Value
Rfree		0.287
Clashscore		10
Ramachandran outliers		0
Sidechain outliers		1.6%
RSRZ outliers		10.9%

Worse   *Better*

▮ Percentile relative to all X-ray structures
▯ Percentile relative to X-ray structures of similar resolution
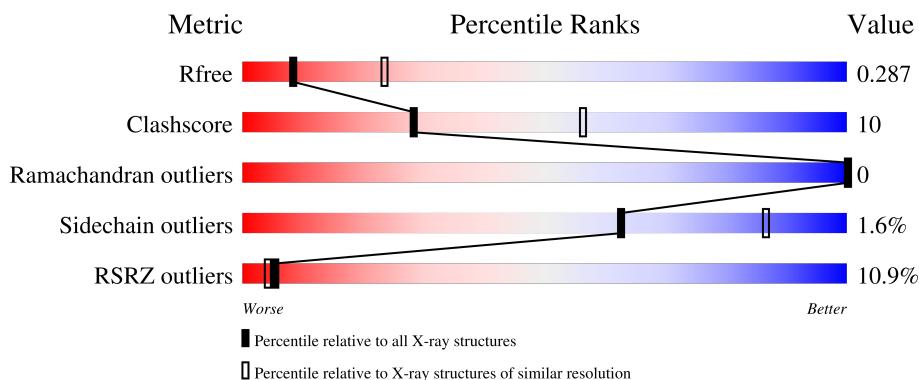
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1957 (2.90-2.90)
Clashscore	141614	2172 (2.90-2.90)
Ramachandran outliers	138981	2115 (2.90-2.90)
Sidechain outliers	138945	2117 (2.90-2.90)
RSRZ outliers	127900	1906 (2.90-2.90)

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	C	278	13% / 79% 19% •
2	D	100	14% / 79% 21%
3	E	9	100%
4	A	208	12% / 80% 15% • •
5	B	246	6% / 79% 20% •
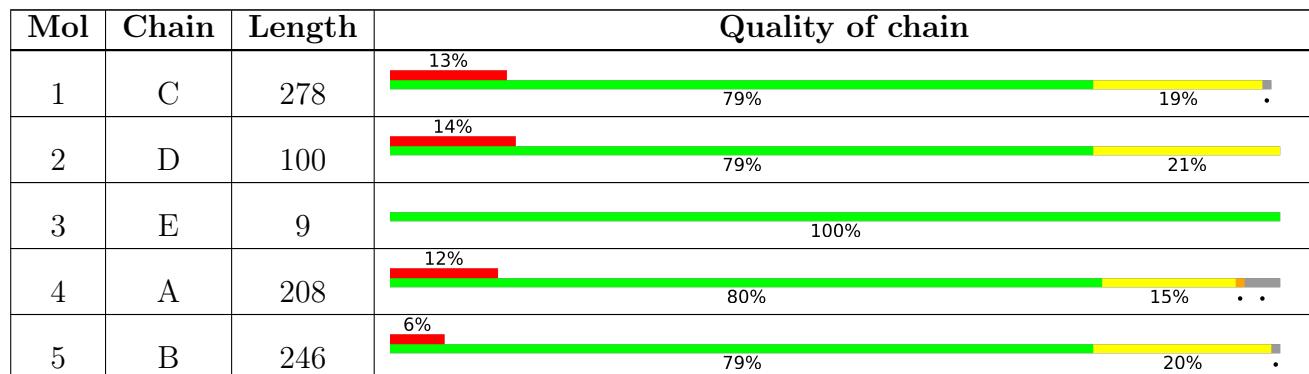
2 Entry composition ⓘ

There are 6 unique types of molecules in this entry. The entry contains 6410 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 MHC class I antigen.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	C	274	Total 2147	C 1345	N 389	O 407	S 6	0	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	277	HIS	-	expression tag	UNP S6BVK3
C	278	HIS	-	expression tag	UNP S6BVK3

- Molecule 2 is a protein called Beta-2-microglobulin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	D	100	Total 782	C 500	N 128	O 151	S 3	0	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
D	0	MET	-	initiating methionine	UNP P61769

- Molecule 3 is a protein called GLN-ALA-SER-GLN-GLU-VAL-LYS-ASN-TRP.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
3	E	9	Total 73	C 45	N 14	O 14	0	0	0

- Molecule 4 is a protein called Alpha chain of C3 TCR.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	A	200	Total 1459	C 907	N 245	O 301	S 6	0	0	0

• Molecule 5 is a protein called Beta Chain of C3 TCR.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
5	B	243	Total 1801	C 1135	N 312	O 345	S 9	0	0	0

• Molecule 6 is water.

| Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	C	62	Total 62	O 62	0	0
6	D	21	Total 21	O 21	0	0
6	E	2	Total 2	O 2	0	0
6	A	34	Total 34	O 34	0	0
6	B	29	Total 29	O 29	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: MHC class I antigen
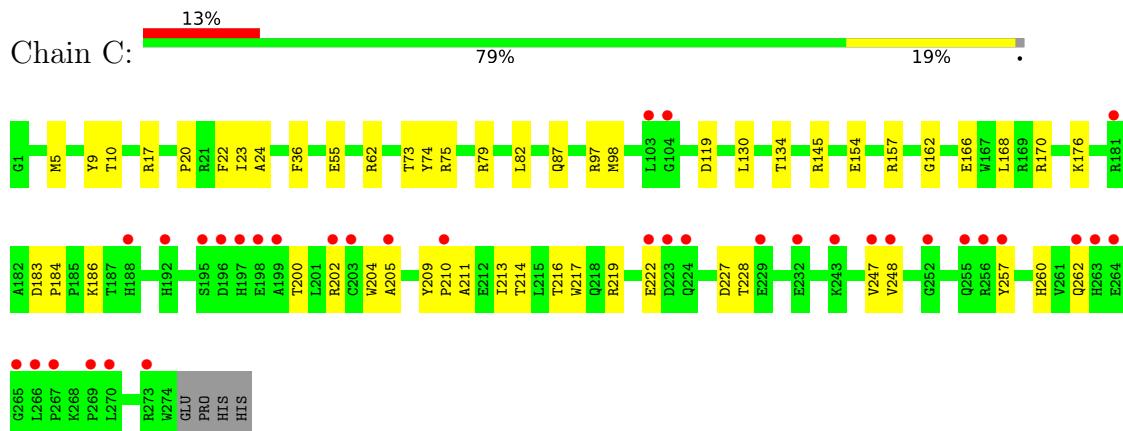

• Molecule 2: Beta-2-microglobulin
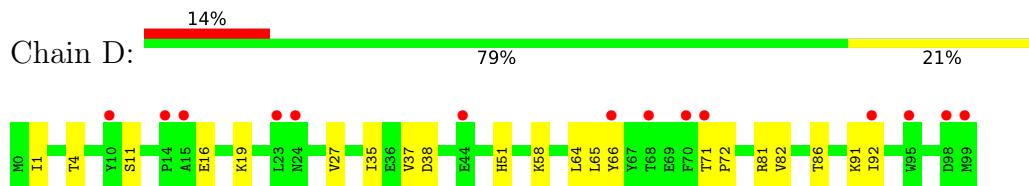
• Molecule 3: GLN-ALA-SER-GLN-GLU-VAL-LYS-ASN-TRP

There are no outlier residues recorded for this chain.

• Molecule 4: Alpha chain of C3 TCR
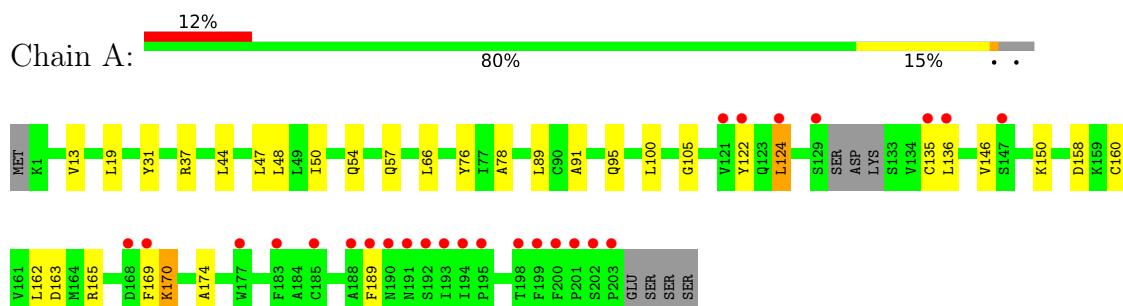
• Molecule 5: Beta Chain of C3 TCR

Chain B:

6%

79%   20%

MET N1 T5 Q6 T7 Q11 V12 L13 K14 M19 Q22 H29 Q37 L43 H47 Y48 I54 T55 D56 Q57 Y64 L76 Y95 Y101 R110 L111 V114 L117 V120 V125 P130 V144 C145 F151 P152 D153 L157 S158

W159 W160 C171 P176 L177 S191 S192 R193 L194 R195 V196 F200 W201 Q202 N203 P204 R205 N206 H207 C210 Q211 V212 Y215 G216 L217 P230 V231 T232 A237 W240 G241 R242 A243 ASP SER
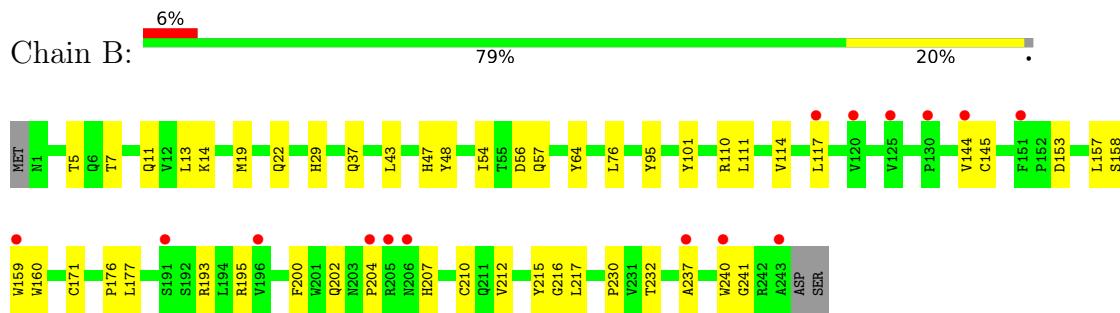
4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	60.31Å 64.81Å 220.88Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	46.66 – 2.90 46.66 – 2.90	Depositor EDS
% Data completeness (in resolution range)	87.4 (46.66-2.90) 87.4 (46.66-2.90)	Depositor EDS
R_{merge}	0.19	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.07 (at 2.91Å)	Xtriage
Refinement program	PHENIX 1.19_4080	Depositor
R, R_{free}	0.233 , 0.287 0.235 , 0.287	Depositor DCC
R_{free} test set	785 reflections (4.51%)	wwPDB-VP
Wilson B-factor (Å^2)	75.6	Xtriage
Anisotropy	0.463	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.29 , 86.4	EDS
L-test for twinning[2]	$< |L| > = 0.45$, $< L^2 > = 0.28$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.92	EDS
Total number of atoms	6410	wwPDB-VP
Average B, all atoms (Å^2)	94.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.61% 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	C	0.39	0/2207	0.61	0/3015
2	D	0.43	0/804	0.63	0/1096
3	E	0.23	0/74	0.33	0/98
4	A	0.40	0/1485	0.57	0/2024
5	B	0.41	0/1849	0.59	0/2533
All	All	0.40	0/6419	0.60	0/8766

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	C	2147	0	1958	34	0
2	D	782	0	707	19	0
3	E	73	0	68	0	0
4	A	1459	0	1340	24	0
5	B	1801	0	1629	50	0
6	A	34	0	0	1	0
6	B	29	0	0	0	0
6	C	62	0	0	2	0
6	D	21	0	0	2	0
6	E	2	0	0	0	0
All	All	6410	0	5702	117	0

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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 (117) 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)
5:B:19:MET:HE1	5:B:111:LEU:HD11	1.27	1.08
5:B:19:MET:CE	5:B:111:LEU:HD11	1.90	1.01
5:B:7:THR:HG22	5:B:22:GLN:HB2	1.49	0.93
5:B:7:THR:CG2	5:B:22:GLN:HB2	1.99	0.92
5:B:13:LEU:HD21	5:B:19:MET:SD	2.13	0.88
5:B:19:MET:CE	5:B:111:LEU:CD1	2.55	0.84
4:A:160:CYS:HA	6:A:314:HOH:O	1.78	0.83
4:A:50:ILE:HD13	4:A:57:GLN:HB2	1.68	0.75
5:B:11:GLN:HG2	5:B:19:MET:SD	2.27	0.75
5:B:215:TYR:HA	5:B:232:THR:HG22	1.67	0.74
2:D:71:THR:O	2:D:71:THR:HG23	1.86	0.73
1:C:217:TRP:HB2	1:C:228:THR:HG21	1.69	0.73
2:D:4:THR:HA	2:D:86:THR:HG21	1.71	0.72
5:B:19:MET:HE3	5:B:111:LEU:CD1	2.19	0.72
2:D:11:SER:HB3	6:D:103:HOH:O	1.90	0.70
5:B:177:LEU:O	5:B:177:LEU:HD12	1.91	0.70
2:D:27:VAL:HG11	2:D:35:ILE:CD1	2.22	0.70
5:B:47:HIS:HD2	5:B:57:GLN:HA	1.56	0.70
1:C:98:MET:HE1	2:D:58:LYS:HD3	1.72	0.70
1:C:219:ARG:HA	1:C:257:TYR:HA	1.72	0.69
5:B:19:MET:HE1	5:B:111:LEU:CD1	2.10	0.69
1:C:202:ARG:HB2	1:C:204:TRP:HE1	1.60	0.67
5:B:19:MET:HE3	5:B:111:LEU:HD13	1.77	0.67
5:B:207:HIS:HD2	5:B:240:TRP:NE1	1.92	0.67
2:D:35:ILE:HG12	2:D:37:VAL:HG23	1.80	0.63
2:D:38:ASP:OD1	2:D:81:ARG:HB3	2.00	0.62
5:B:157:LEU:HD13	5:B:212:VAL:HG23	1.81	0.61
2:D:11:SER:CB	6:D:103:HOH:O	2.48	0.61
5:B:29:HIS:HD2	5:B:95:TYR:CD1	2.19	0.60
4:A:124:LEU:HD22	5:B:144:VAL:HG12	1.84	0.60
2:D:27:VAL:HG11	2:D:35:ILE:HD11	1.84	0.59
1:C:154:GLU:OE1	5:B:101:TYR:OH	2.19	0.59
1:C:17:ARG:NH1	6:C:301:HOH:O	2.35	0.59
5:B:204:PRO:HA	5:B:241:GLY:HA3	1.85	0.58
4:A:37:ARG:HB3	4:A:47:LEU:HD11	1.85	0.58
1:C:55:GLU:OE2	1:C:170:ARG:NH1	2.32	0.58
4:A:169:PHE:HE2	5:B:195:ARG:HD3	1.69	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:158:SER:OG	5:B:160:TRP:NE1	2.37	0.57
1:C:9:TYR:HB2	1:C:97:ARG:HB3	1.87	0.57
5:B:47:HIS:CD2	5:B:57:GLN:HA	2.40	0.57
1:C:145:ARG:HD2	6:C:319:HOH:O	2.06	0.56
1:C:119:ASP:O	2:D:1:ILE:HG22	2.06	0.56
2:D:37:VAL:HB	2:D:66:TYR:CE1	2.41	0.56
2:D:91:LYS:NZ	2:D:92:ILE:O	2.39	0.56
4:A:146:VAL:HG21	4:A:158:ASP:HA	1.86	0.55
1:C:62:ARG:HG3	4:A:95:GLN:HB3	1.88	0.55
5:B:145:CYS:HB2	5:B:159:TRP:CZ2	2.42	0.55
5:B:202:GLN:O	5:B:204:PRO:HD3	2.07	0.54
5:B:37:GLN:CB	5:B:43:LEU:HD23	2.38	0.54
5:B:37:GLN:HB2	5:B:43:LEU:HD23	1.89	0.53
1:C:130:LEU:HB3	1:C:157:ARG:HG3	1.90	0.53
5:B:64:TYR:HB3	5:B:76:LEU:HD11	1.89	0.53
2:D:64:LEU:HD23	2:D:65:LEU:N	2.23	0.53
5:B:48:TYR:CZ	5:B:56:ASP:HB3	2.44	0.53
1:C:162:GLY:O	1:C:166:GLU:HG3	2.07	0.52
2:D:71:THR:O	2:D:71:THR:CG2	2.55	0.52
5:B:37:GLN:HB2	5:B:43:LEU:CD2	2.40	0.52
5:B:37:GLN:HG3	5:B:43:LEU:HD23	1.91	0.52
1:C:219:ARG:HB3	1:C:222:GLU:HB2	1.91	0.51
1:C:5:MET:HB2	1:C:168:LEU:HD13	1.92	0.51
4:A:174:ALA:HA	5:B:193:ARG:HH21	1.76	0.51
1:C:79:ARG:HA	1:C:82:LEU:HD12	1.93	0.50
1:C:20:PRO:HB2	1:C:75:ARG:HG2	1.93	0.50
4:A:162:LEU:HD12	4:A:162:LEU:O	2.12	0.50
1:C:24:ALA:HB3	1:C:36:PHE:HB3	1.93	0.50
1:C:200:THR:HG22	1:C:248:VAL:HG22	1.94	0.49
4:A:163:ASP:OD1	4:A:170:LYS:HE2	2.11	0.49
4:A:162:LEU:HD12	4:A:162:LEU:C	2.32	0.49
1:C:219:ARG:O	1:C:222:GLU:HB2	2.12	0.49
1:C:227:ASP:OD1	1:C:247:VAL:HG23	2.13	0.49
2:D:16:GLU:HG3	2:D:19:LYS:HG3	1.95	0.49
1:C:22:PHE:CE2	1:C:24:ALA:HB2	2.49	0.48
5:B:207:HIS:CD2	5:B:240:TRP:NE1	2.78	0.47
5:B:216:GLY:H	5:B:232:THR:HG22	1.79	0.47
1:C:216:THR:HB	1:C:260:HIS:HB2	1.95	0.47
4:A:169:PHE:CE2	5:B:195:ARG:HD3	2.47	0.47
5:B:5:THR:O	5:B:5:THR:HG23	2.14	0.47
5:B:37:GLN:CG	5:B:43:LEU:HD23	2.45	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:51:HIS:HB3	2:D:66:TYR:CE2	2.50	0.46
4:A:31:TYR:HE1	4:A:66:LEU:HD11	1.81	0.46
4:A:163:ASP:OD1	4:A:170:LYS:CE	2.64	0.45
1:C:211:ALA:O	1:C:213:ILE:HG22	2.17	0.45
2:D:19:LYS:O	2:D:72:PRO:HD2	2.16	0.45
4:A:50:ILE:HD11	4:A:54:GLN:HB2	1.99	0.44
5:B:11:GLN:HB3	5:B:111:LEU:HD12	1.98	0.44
5:B:210:CYS:O	5:B:237:ALA:N	2.50	0.44
4:A:50:ILE:HD12	4:A:50:ILE:HA	1.81	0.44
4:A:48:LEU:HD23	4:A:48:LEU:HA	1.92	0.43
4:A:91:ALA:HB1	4:A:100:LEU:HG	2.00	0.43
5:B:153:ASP:OD1	5:B:176:PRO:HG2	2.18	0.43
1:C:74:TYR:OH	1:C:97:ARG:HD3	2.19	0.43
5:B:207:HIS:HD2	5:B:240:TRP:CE2	2.37	0.43
5:B:177:LEU:HD12	5:B:177:LEU:C	2.39	0.42
1:C:214:THR:HB	1:C:262:GLN:HB3	2.02	0.42
1:C:73:THR:HG22	5:B:54:ILE:HD13	2.01	0.42
2:D:37:VAL:HG22	2:D:82:VAL:HG13	2.01	0.42
5:B:207:HIS:HD2	5:B:240:TRP:HE1	1.62	0.42
2:D:51:HIS:HB3	2:D:66:TYR:CD2	2.55	0.42
4:A:76:TYR:CE2	4:A:78:ALA:HB2	2.55	0.42
4:A:165:ARG:HA	4:A:165:ARG:HD3	1.87	0.42
1:C:82:LEU:HD23	1:C:87:GLN:HB2	2.01	0.41
1:C:209:TYR:CD1	1:C:210:PRO:HA	2.55	0.41
4:A:13:VAL:HG21	4:A:19:LEU:HB3	2.02	0.41
1:C:10:THR:HB	1:C:23:ILE:HB	2.02	0.41
4:A:44:LEU:HD11	5:B:43:LEU:HD11	2.03	0.41
1:C:202:ARG:HB2	1:C:204:TRP:NE1	2.31	0.41
5:B:7:THR:HG23	5:B:22:GLN:HB2	1.92	0.41
1:C:227:ASP:OD1	1:C:227:ASP:C	2.60	0.41
5:B:216:GLY:H	5:B:232:THR:CG2	2.34	0.41
5:B:217:LEU:HD13	5:B:230:PRO:HD2	2.03	0.41
5:B:157:LEU:HD11	5:B:210:CYS:SG	2.61	0.40
4:A:89:LEU:HD23	4:A:105:GLY:HA3	2.03	0.40
5:B:14:LYS:HA	5:B:114:VAL:O	2.20	0.40
1:C:183:ASP:HA	1:C:184:PRO:HD3	1.91	0.40
1:C:186:LYS:O	1:C:205:ALA:HA	2.21	0.40
5:B:117:LEU:HD22	5:B:217:LEU:HD21	2.03	0.40
4:A:122:TYR:O	4:A:135:CYS:HB2	2.22	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	C	272/278 (98%)	260 (96%)	12 (4%)	0	100	100
2	D	98/100 (98%)	96 (98%)	2 (2%)	0	100	100
3	E	7/9 (78%)	7 (100%)	0	0	100	100
4	A	196/208 (94%)	188 (96%)	8 (4%)	0	100	100
5	B	241/246 (98%)	234 (97%)	7 (3%)	0	100	100
All	All	814/841 (97%)	785 (96%)	29 (4%)	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	C	210/236 (89%)	208 (99%)	2 (1%)	76	92
2	D	83/95 (87%)	83 (100%)	0	100	100
3	E	7/8 (88%)	7 (100%)	0	100	100
4	A	155/183 (85%)	150 (97%)	5 (3%)	39	73
5	B	179/211 (85%)	176 (98%)	3 (2%)	60	86
All	All	634/733 (86%)	624 (98%)	10 (2%)	62	86

All (10) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C	134	THR
1	C	176	LYS
4	A	124	LEU
4	A	136	LEU
4	A	150	LYS
4	A	170	LYS
4	A	189	PHE
5	B	110	ARG
5	B	171	CYS
5	B	200	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:

Mol	Chain	Res	Type
1	C	32	GLN
1	C	70	ASN
1	C	180	GLN
5	B	47	HIS
5	B	207	HIS

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 ⓘ

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	C	274/278 (98%)	0.49	35 (12%)	3	2	38, 72, 189, 244	0
2	D	100/100 (100%)	0.69	14 (14%)	2	2	61, 112, 155, 176	0
3	E	9/9 (100%)	-0.39	0	100	100	49, 50, 56, 56	1 (11%)
4	A	200/208 (96%)	0.52	26 (13%)	3	2	37, 77, 202, 270	0
5	B	243/246 (98%)	0.26	15 (6%)	20	16	39, 88, 136, 165	0
All	All	826/841 (98%)	0.44	90 (10%)	5	4	37, 86, 175, 270	1 (0%)

All (90) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
4	A	135	CYS	7.5
4	A	194	ILE	7.3
4	A	199	PHE	7.2
1	C	248	VAL	7.1
1	C	203	CYS	6.6
4	A	189	PHE	6.2
1	C	266	LEU	5.7
2	D	68	THR	5.4
1	C	195	SER	5.4
1	C	197	HIS	5.3
1	C	224	GLN	5.2
2	D	70	PHE	4.8
5	B	206	ASN	4.7
4	A	192	SER	4.6
4	A	195	PRO	4.5
2	D	23	LEU	4.4
1	C	192	HIS	4.4
1	C	205	ALA	4.1
2	D	15	ALA	4.1
1	C	267	PRO	4.1

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Mol	Chain	Res	Type	RSRZ
1	C	265	GLY	4.0
1	C	198	GLU	4.0
1	C	223	ASP	4.0
1	C	257	TYR	3.8
1	C	222	GLU	3.8
4	A	188	ALA	3.7
5	B	144	VAL	3.7
4	A	202	SER	3.6
5	B	125	VAL	3.6
4	A	129	SER	3.6
4	A	193	ILE	3.5
2	D	44	GLU	3.5
4	A	124	LEU	3.5
5	B	205	ARG	3.5
2	D	71	THR	3.5
4	A	169	PHE	3.5
1	C	269	PRO	3.4
1	C	256	ARG	3.4
5	B	191	SER	3.3
1	C	270	LEU	3.3
2	D	66	TYR	3.2
5	B	240	TRP	3.2
1	C	188	HIS	3.2
1	C	243	LYS	3.2
4	A	136	LEU	3.1
1	C	273	ARG	3.1
4	A	190	ASN	3.0
5	B	159	TRP	3.0
5	B	243	ALA	3.0
4	A	168	ASP	3.0
4	A	183	PHE	2.9
1	C	196	ASP	2.9
4	A	121	VAL	2.8
4	A	177	TRP	2.7
1	C	247	VAL	2.7
5	B	151	PHE	2.6
5	B	120	VAL	2.6
4	A	198	THR	2.6
2	D	10	TYR	2.6
4	A	203	PRO	2.6
2	D	98	ASP	2.5
4	A	191	ASN	2.5

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Mol	Chain	Res	Type	RSRZ
5	B	130	PRO	2.5
1	C	104	GLY	2.4
1	C	264	GLU	2.4
2	D	24	ASN	2.4
1	C	262	GLN	2.4
1	C	199	ALA	2.3
4	A	201	PRO	2.3
4	A	185	CYS	2.3
1	C	255	GLN	2.3
2	D	14	PRO	2.2
2	D	92	ILE	2.2
1	C	202	ARG	2.2
5	B	204	PRO	2.2
1	C	252	GLY	2.2
4	A	200	PHE	2.2
1	C	263	HIS	2.1
5	B	196	VAL	2.1
1	C	229	GLU	2.1
4	A	147	SER	2.1
2	D	99	MET	2.0
1	C	103	LEU	2.0
5	B	117	LEU	2.0
2	D	95	TRP	2.0
4	A	122	TYR	2.0
5	B	237	ALA	2.0
1	C	210	PRO	2.0
1	C	181	ARG	2.0
1	C	232	GLU	2.0

6.2 Non-standard residues in protein, DNA, RNA chains (i)

There are no non-standard protein/DNA/RNA residues in this entry.

6.3 Carbohydrates (i)

There are no monosaccharides in this entry.

6.4 Ligands (i)

There are no ligands in this entry.

6.5 Other polymers ⓘ

There are no such residues in this entry.