



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 8, 2024 – 11:01 AM JST

PDB ID : 8HYL
Title : Crystal structure of DO1 Fv-clasp fragment
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Deposited on : 2023-01-06
Resolution : 2.00 Å(reported)

This is a Full wwPDB X-ray Structure 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/XrayValidationReportHelp>

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:

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

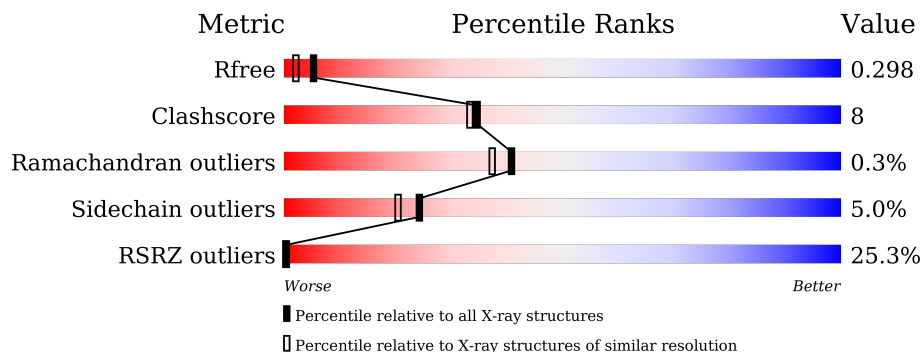
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION





The reported resolution of this entry is 2.00 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)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	8085 (2.00-2.00)
Clashscore	141614	9178 (2.00-2.00)
Ramachandran outliers	138981	9054 (2.00-2.00)
Sidechain outliers	138945	9053 (2.00-2.00)
RSRZ outliers	127900	7900 (2.00-2.00)

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 $\leq 5\%$. 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	170	 23% 80% 15% ..
1	C	170	 21% 81% 16% ..
2	B	165	 27% 78% 19% ..
2	D	165	 27% 73% 21% ..

2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 5569 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 VH-SARAH.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	164	1311	833	217	253	8	0	0	0
1	C	166	1325	840	219	258	8	0	0	0

- Molecule 2 is a protein called VL-SARAH.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	162	1286	812	223	244	7	0	0	0
2	D	159	1265	801	217	240	7	0	0	0

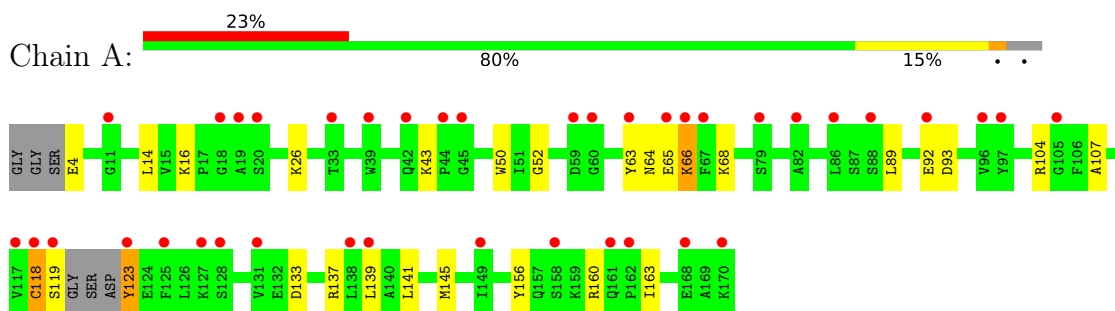
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	93	Total 93	O 93	0	0
3	B	80	Total 80	O 80	0	0
3	C	111	Total 111	O 111	0	0
3	D	98	Total 98	O 98	0	0

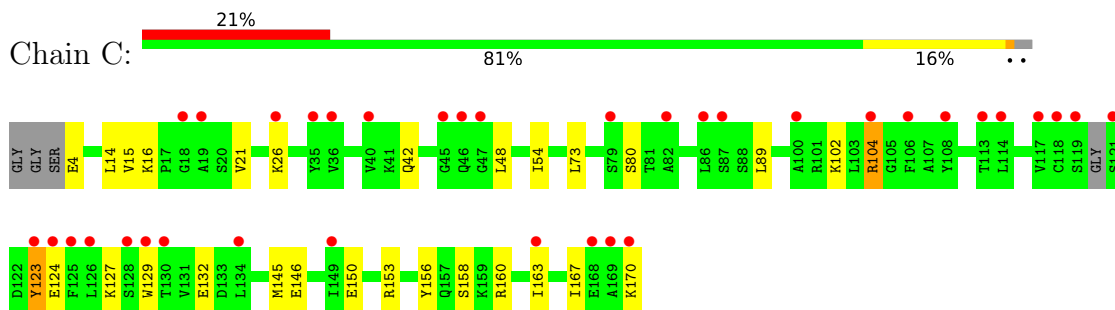
3 Residue-property plots

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.

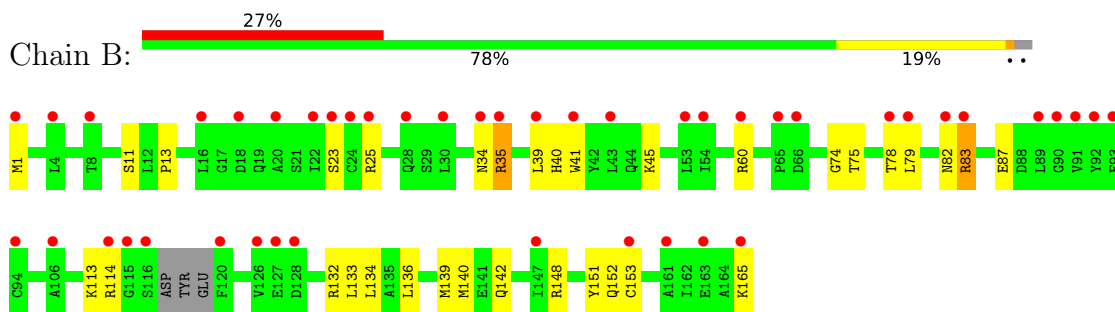
- Molecule 1: VH-SARAH



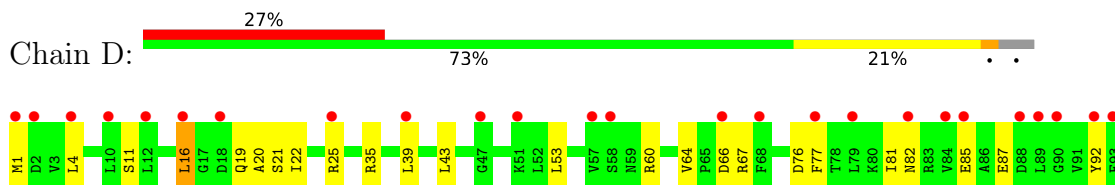
- Molecule 1: VH-SARAH



- Molecule 2: VL-SARAH



- Molecule 2: VL-SARAH





4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	72.28Å 86.21Å 112.75Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	19.98 – 2.00 19.98 – 2.00	Depositor EDS
% Data completeness (in resolution range)	99.9 (19.98-2.00) 99.9 (19.98-2.00)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.71 (at 2.01Å)	Xtrriage
Refinement program	PHENIX (1.20.1_4487: 000)	Depositor
R, R_{free}	0.241 , 0.298 0.242 , 0.298	Depositor DCC
R_{free} test set	2392 reflections (4.96%)	wwPDB-VP
Wilson B-factor (Å ²)	29.5	Xtrriage
Anisotropy	0.154	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.32 , 45.7	EDS
L-test for twinning ²	$\langle L \rangle = 0.45$, $\langle L^2 \rangle = 0.27$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.91	EDS
Total number of atoms	5569	wwPDB-VP
Average B, all atoms (Å ²)	33.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 26.71 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 2.5055e-03. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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	0.39	0/1339	0.65	0/1802
1	C	0.39	0/1353	0.63	0/1821
2	B	0.35	0/1310	0.67	0/1764
2	D	0.41	0/1289	0.70	0/1737
All	All	0.38	0/5291	0.66	0/7124

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	C	0	1
2	B	0	1
All	All	0	2

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	B	83	ARG	Sidechain
1	C	104	ARG	Sidechain

5.2 Too-close contacts [i](#)

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	1311	0	1292	28	0
1	C	1325	0	1301	18	0
2	B	1286	0	1296	25	0
2	D	1265	0	1275	28	0
3	A	93	0	0	3	0
3	B	80	0	0	6	0
3	C	111	0	0	6	0
3	D	98	0	0	5	0
All	All	5569	0	5164	86	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 8.

All (86) 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:C:153:ARG:NH1	3:C:201:HOH:O	1.75	1.15
1:C:4:GLU:N	3:C:202:HOH:O	2.03	0.90
2:D:128:ASP:OD1	3:D:201:HOH:O	1.94	0.85
2:B:13:PRO:HB2	2:B:113:LYS:HG3	1.65	0.79
2:D:76:ASP:HB3	3:D:263:HOH:O	1.90	0.71
1:A:156:TYR:CD2	2:B:140:MET:HG3	2.25	0.71
2:D:16:LEU:HD12	2:D:16:LEU:H	1.56	0.70
1:A:145:MET:HG3	2:B:151:TYR:CD2	2.28	0.68
1:C:15:VAL:HG11	1:C:89:LEU:HD13	1.78	0.66
1:C:16:LYS:NZ	3:C:205:HOH:O	2.29	0.64
1:A:104:ARG:HH11	1:A:104:ARG:HG3	1.63	0.64
1:A:4:GLU:OE2	3:A:201:HOH:O	2.15	0.62
2:D:25:ARG:NH1	2:D:76:ASP:OD2	2.33	0.62
2:D:35:ARG:HG3	2:D:35:ARG:HH11	1.65	0.62
1:C:123:TYR:CD1	2:D:157:PRO:HA	2.35	0.61
2:D:53:LEU:HA	2:D:64:VAL:HG21	1.83	0.60
1:A:14:LEU:HD22	2:B:152:GLN:HG3	1.85	0.58
2:B:132:ARG:NH1	3:B:201:HOH:O	2.22	0.57
1:C:123:TYR:CE1	2:D:157:PRO:HA	2.40	0.56
1:C:26:LYS:NZ	1:C:80:SER:HB2	2.21	0.56
2:D:145:GLU:OE1	2:D:148:ARG:NH2	2.30	0.56
2:D:16:LEU:HD11	2:D:124:TRP:CZ2	2.41	0.55
2:D:97:SER:HB3	2:D:102:LEU:HD21	1.88	0.55
1:A:63:TYR:HB2	1:A:68:LYS:CE	2.37	0.55
1:A:160:ARG:HH22	2:B:140:MET:HE2	1.73	0.54
2:D:67:ARG:CZ	2:D:85:GLU:HG3	2.38	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:63:TYR:HB2	1:A:68:LYS:HE3	1.91	0.53
1:C:146:GLU:OE1	3:C:201:HOH:O	2.19	0.53
1:C:156:TYR:O	1:C:160:ARG:HG3	2.09	0.53
1:A:160:ARG:HH22	2:B:140:MET:CE	2.22	0.52
2:B:35:ARG:HG2	2:B:35:ARG:HH11	1.73	0.52
2:B:35:ARG:HG2	2:B:35:ARG:NH1	2.24	0.52
2:B:45:LYS:HE2	2:B:87:GLU:O	2.10	0.52
2:B:45:LYS:HE3	3:B:259:HOH:O	2.11	0.51
2:D:141:GLU:OE2	2:D:148:ARG:NH2	2.38	0.51
2:B:136:LEU:HD23	2:B:139:MET:SD	2.50	0.51
1:C:167:ILE:O	1:C:170:LYS:HB2	2.12	0.50
1:A:14:LEU:HD11	2:B:153:CYS:SG	2.51	0.50
2:D:43:LEU:HB2	2:D:53:LEU:HD11	1.94	0.50
2:D:11:SER:OG	2:D:111:GLU:OE2	2.30	0.49
1:C:124:GLU:HB3	3:C:251:HOH:O	2.12	0.49
2:B:39:LEU:HG	2:B:40:HIS:N	2.27	0.49
1:A:137:ARG:NH2	2:D:4:LEU:HB2	2.27	0.49
2:D:19:GLN:OE1	2:D:82:ASN:ND2	2.45	0.49
1:A:43:LYS:NZ	1:A:92:GLU:O	2.46	0.48
1:C:150:GLU:HG2	3:C:201:HOH:O	2.13	0.48
2:D:67:ARG:NE	2:D:85:GLU:HG3	2.29	0.48
1:A:107:ALA:HB3	3:A:217:HOH:O	2.12	0.48
2:D:148:ARG:HD2	3:D:287:HOH:O	2.12	0.48
2:B:142:GLN:NE2	3:B:208:HOH:O	2.46	0.48
2:D:35:ARG:HG3	2:D:35:ARG:NH1	2.29	0.48
1:C:42:GLN:HB2	1:C:48:LEU:HD23	1.97	0.47
2:B:25:ARG:NE	3:B:207:HOH:O	2.46	0.47
1:C:145:MET:HE1	3:D:274:HOH:O	2.16	0.46
2:B:134:LEU:HD22	3:B:261:HOH:O	2.14	0.46
1:A:14:LEU:HD11	1:A:118:CYS:SG	2.55	0.46
1:C:163:ILE:O	1:C:167:ILE:HG13	2.14	0.46
1:A:137:ARG:O	1:A:141:LEU:HG	2.17	0.45
1:A:14:LEU:HD22	2:B:152:GLN:CG	2.46	0.45
2:D:16:LEU:HD11	2:D:124:TRP:CE2	2.51	0.45
2:D:87:GLU:HB3	2:D:131:LYS:HD3	1.99	0.45
2:D:20:ALA:HB3	2:D:81:ILE:HB	1.97	0.45
1:A:16:LYS:H	1:A:16:LYS:HD2	1.82	0.44
1:A:104:ARG:HG3	1:A:104:ARG:NH1	2.32	0.44
2:D:148:ARG:NH2	3:D:205:HOH:O	2.50	0.44
1:A:89:LEU:HD12	1:A:93:ASP:CB	2.48	0.44
1:A:163:ILE:HG21	2:B:133:LEU:HG	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:26:LYS:HD3	3:A:278:HOH:O	2.17	0.43
2:D:43:LEU:HD13	2:D:92:TYR:CZ	2.53	0.43
1:A:133:ASP:HB3	2:D:1:MET:HB2	2.00	0.43
1:A:63:TYR:HB2	1:A:68:LYS:NZ	2.33	0.43
1:A:14:LEU:HD12	1:A:14:LEU:HA	1.81	0.42
2:D:39:LEU:HD22	2:D:77:PHE:CG	2.54	0.42
2:D:22:ILE:HG12	2:D:108:THR:HG21	2.01	0.42
2:B:34:ASN:C	2:B:35:ARG:HG3	2.39	0.42
2:B:148:ARG:NH2	3:B:209:HOH:O	2.47	0.42
1:C:26:LYS:HZ1	1:C:80:SER:HB2	1.84	0.42
1:A:64:ASN:OD1	1:A:66:LYS:HD3	2.19	0.42
2:B:41:TRP:CE2	2:B:79:LEU:HB2	2.55	0.41
2:B:25:ARG:HA	2:B:75:THR:O	2.20	0.41
2:B:82:ASN:O	2:B:83:ARG:HB2	2.21	0.41
1:A:50:TRP:CZ2	1:A:52:GLY:HA2	2.56	0.41
2:B:1:MET:HG3	1:C:129:TRP:CH2	2.55	0.41
1:A:89:LEU:HD13	1:A:89:LEU:HA	1.92	0.40
1:A:119:SER:OG	1:A:123:TYR:HE2	2.05	0.40
1:C:73:LEU:HA	1:C:73:LEU:HD23	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 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	160/170 (94%)	155 (97%)	4 (2%)	1 (1%)	25	19
1	C	162/170 (95%)	159 (98%)	3 (2%)	0	100	100
2	B	158/165 (96%)	152 (96%)	5 (3%)	1 (1%)	25	19
2	D	155/165 (94%)	149 (96%)	6 (4%)	0	100	100
All	All	635/670 (95%)	615 (97%)	18 (3%)	2 (0%)	41	37

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	118	CYS
2	B	74	GLY

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 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	143/146 (98%)	139 (97%)	4 (3%)	43	44
1	C	145/146 (99%)	136 (94%)	9 (6%)	18	13
2	B	146/149 (98%)	139 (95%)	7 (5%)	25	22
2	D	144/149 (97%)	135 (94%)	9 (6%)	18	13
All	All	578/590 (98%)	549 (95%)	29 (5%)	24	20

All (29) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	65	GLU
1	A	66	LYS
1	A	123	TYR
1	A	139	LEU
2	B	11	SER
2	B	23	SER
2	B	35	ARG
2	B	60	ARG
2	B	78	THR
2	B	114	ARG
2	B	165	LYS
1	C	14	LEU
1	C	21	VAL
1	C	54	ILE
1	C	102	LYS
1	C	104	ARG
1	C	123	TYR
1	C	127	LYS

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Mol	Chain	Res	Type
1	C	132	GLU
1	C	158	SER
2	D	16	LEU
2	D	21	SER
2	D	60	ARG
2	D	66	ASP
2	D	102	LEU
2	D	111	GLU
2	D	113	LYS
2	D	126	VAL
2	D	163	GLU

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

Mol	Chain	Res	Type
2	D	19	GLN
2	D	82	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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(Å ²)	Q<0.9
1	A	164/170 (96%)	1.46	39 (23%) 0 0	21, 31, 45, 54	0
1	C	166/170 (97%)	1.43	36 (21%) 0 0	20, 31, 52, 61	0
2	B	162/165 (98%)	1.57	45 (27%) 0 0	21, 32, 46, 66	0
2	D	159/165 (96%)	1.62	45 (28%) 0 0	20, 31, 53, 74	0
All	All	651/670 (97%)	1.52	165 (25%) 0 0	20, 31, 50, 74	0

All (165) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	123	TYR	11.4
2	D	1	MET	7.3
1	A	66	LYS	6.1
1	C	169	ALA	5.6
1	C	119	SER	5.2
1	A	118	CYS	5.0
2	B	120	PHE	5.0
2	D	93	PHE	5.0
2	B	115	GLY	4.6
1	A	65	GLU	4.5
1	C	18	GLY	4.4
2	D	2	ASP	4.4
2	D	16	LEU	4.3
2	B	114	ARG	4.2
2	D	39	LEU	4.2
2	D	164	ALA	4.0
1	C	118	CYS	3.9
1	A	86	LEU	3.9
1	A	123	TYR	3.9
2	D	165	LYS	3.7
2	D	84	VAL	3.7

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Mol	Chain	Res	Type	RSRZ
2	B	23	SER	3.7
2	D	79	LEU	3.6
1	C	117	VAL	3.6
1	A	128	SER	3.6
1	C	126	LEU	3.6
2	B	79	LEU	3.6
2	D	121	LEU	3.6
2	D	127	GLU	3.5
2	D	112	LEU	3.4
2	B	30	LEU	3.4
2	D	68	PHE	3.3
2	B	89	LEU	3.3
2	D	82	ASN	3.3
1	C	113	THR	3.3
1	A	45	GLY	3.2
2	D	47	GLY	3.2
1	C	19	ALA	3.2
1	C	170	LYS	3.2
1	C	86	LEU	3.2
2	B	92	TYR	3.2
1	A	19	ALA	3.1
2	D	102	LEU	3.1
2	B	39	LEU	3.1
1	A	158	SER	3.1
1	A	170	LYS	3.1
1	C	108	TYR	3.1
1	C	149	ILE	3.1
1	C	45	GLY	3.0
2	B	153	CYS	3.0
2	D	162	ILE	3.0
1	A	105	GLY	3.0
1	C	121	SER	3.0
1	C	46	GLN	3.0
2	D	156	GLN	3.0
1	C	40	VAL	2.9
2	D	123	SER	2.9
2	B	1	MET	2.9
1	A	67	PHE	2.9
1	A	92	GLU	2.9
1	A	117	VAL	2.9
2	B	116	SER	2.9
1	A	119	SER	2.8

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Mol	Chain	Res	Type	RSRZ
1	A	18	GLY	2.8
2	D	159	LEU	2.8
1	C	47	GLY	2.8
1	A	125	PHE	2.8
2	B	93	PHE	2.8
1	A	63	TYR	2.8
2	D	113	LYS	2.8
2	D	66	ASP	2.7
1	A	88	SER	2.7
2	B	24	CYS	2.7
1	A	139	LEU	2.7
2	D	4	LEU	2.7
1	C	130	THR	2.7
2	B	66	ASP	2.7
2	D	109	LYS	2.7
2	B	43	LEU	2.7
2	B	4	LEU	2.7
1	A	96	VAL	2.6
2	B	22	ILE	2.6
2	D	10	LEU	2.6
2	D	151	TYR	2.6
1	C	125	PHE	2.6
1	A	131	VAL	2.6
2	B	65	PRO	2.6
1	C	134	LEU	2.6
2	B	163	GLU	2.5
2	D	58	SER	2.5
1	C	82	ALA	2.5
2	D	57	VAL	2.5
2	D	92	TYR	2.5
1	C	129	TRP	2.5
1	A	60	GLY	2.5
1	C	128	SER	2.5
2	B	128	ASP	2.5
2	D	88	ASP	2.5
2	B	54	ILE	2.5
2	D	147	ILE	2.5
2	B	165	LYS	2.5
2	D	85	GLU	2.5
2	B	82	ASN	2.4
1	A	39	TRP	2.4
1	A	42	GLN	2.4

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Mol	Chain	Res	Type	RSRZ
2	B	161	ALA	2.4
2	D	12	LEU	2.4
2	B	16	LEU	2.4
2	D	148	ARG	2.4
1	A	138	LEU	2.4
2	B	28	GLN	2.4
1	C	168	GLU	2.3
2	B	53	LEU	2.3
2	D	77	PHE	2.3
2	B	18	ASP	2.3
2	B	34	ASN	2.3
1	C	114	LEU	2.3
2	D	129	LEU	2.3
1	A	11	GLY	2.3
2	B	147	ILE	2.3
2	D	163	GLU	2.3
2	D	137	ASP	2.3
2	D	51	LYS	2.3
1	A	149	ILE	2.3
1	C	87	SER	2.3
1	A	127	LYS	2.3
1	A	79	SER	2.3
1	C	106	PHE	2.2
2	B	78	THR	2.2
2	B	41	TRP	2.2
2	D	89	LEU	2.2
2	B	8	THR	2.2
1	C	104	ARG	2.2
2	B	35	ARG	2.2
2	B	83	ARG	2.2
1	A	59	ASP	2.2
1	C	35	TYR	2.2
2	D	155	ARG	2.2
1	A	168	GLU	2.2
1	A	44	PRO	2.2
1	A	161	GLN	2.1
1	C	36	VAL	2.1
1	C	100	ALA	2.1
1	A	97	TYR	2.1
1	C	79	SER	2.1
1	A	82	ALA	2.1
2	D	18	ASP	2.1

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Mol	Chain	Res	Type	RSRZ
2	B	25	ARG	2.1
2	D	25	ARG	2.1
2	D	90	GLY	2.1
1	A	20	SER	2.1
1	A	162	PRO	2.1
2	B	60	ARG	2.1
1	A	33	THR	2.1
2	B	94	CYS	2.1
1	C	124	GLU	2.0
1	C	163	ILE	2.0
2	B	126	VAL	2.0
2	B	106	ALA	2.0
2	B	127	GLU	2.0
2	B	90	GLY	2.0
1	C	26	LYS	2.0
2	B	20	ALA	2.0
2	B	91	VAL	2.0
2	D	122	LYS	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 [i](#)

There are no such residues in this entry.