



Full wwPDB X-ray Structure Validation Report ⓘ

Oct 10, 2023 – 05:49 AM EDT

PDB ID : 7T0J
Title : Crystal structure of S25-2 Fab Unliganded 3
Authors : Legg, M.S.G.; Blackler, R.J.; Evans, S.V.
Deposited on : 2021-11-29
Resolution : 2.15 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 : 2.35.1
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) : 2.35.1

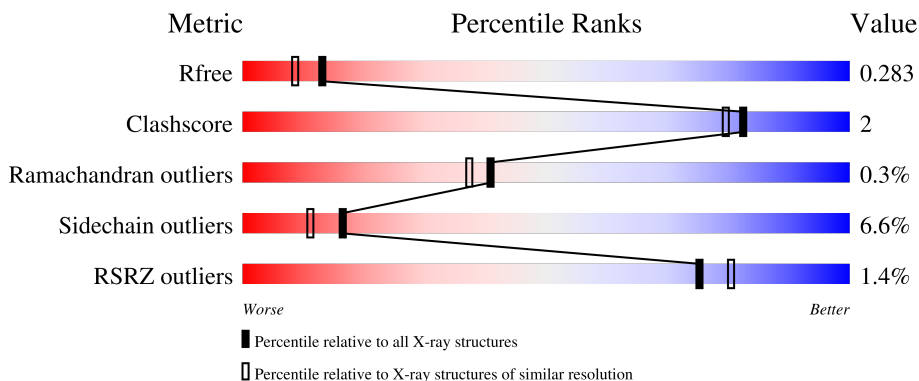
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.15 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	1479 (2.16-2.16)
Clashscore	141614	1585 (2.16-2.16)
Ramachandran outliers	138981	1560 (2.16-2.16)
Sidechain outliers	138945	1559 (2.16-2.16)
RSRZ outliers	127900	1456 (2.16-2.16)

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	219	<div style="display: flex; align-items: center;"> <div style="width: 5%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 92%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 6%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: grey;"></div> </div>
1	C	219	<div style="display: flex; align-items: center;"> <div style="width: 89%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 10%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: orange;"></div> </div>
1	E	219	<div style="display: flex; align-items: center;"> <div style="width: 86%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 13%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: orange;"></div> </div>
1	L	219	<div style="display: flex; align-items: center;"> <div style="width: 85%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 13%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: orange;"></div> </div>
2	B	223	<div style="display: flex; align-items: center;"> <div style="width: 0%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 82%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 13%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 4%; height: 10px; background-color: grey;"></div> </div>

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Mol	Chain	Length	Quality of chain
2	D	223	<p>% 87% 9% •</p>
2	F	223	<p>3% 88% 9% ••</p>
2	H	223	<p>93% 6% •</p>

2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 13697 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 S25-2 Fab light chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	L	218	Total 1694	C 1053	N 289	O 345	S 7	0	0	0
1	A	218	Total 1681	C 1047	N 285	O 342	S 7	0	0	0
1	C	219	Total 1700	C 1056	N 290	O 346	S 8	0	0	0
1	E	218	Total 1688	C 1050	N 286	O 345	S 7	0	0	0

- Molecule 2 is a protein called S25-2 Fab heavy chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	H	223	Total 1702	C 1078	N 284	O 333	S 7	0	0	0
2	B	214	Total 1628	C 1032	N 270	O 319	S 7	0	0	0
2	D	214	Total 1642	C 1045	N 270	O 320	S 7	0	0	0
2	F	219	Total 1678	C 1064	N 279	O 328	S 7	0	0	0

- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	L	25	Total 25	O 25	0	0
3	H	64	Total 64	O 64	0	0
3	A	14	Total 14	O 14	0	0
3	B	13	Total 13	O 13	0	0

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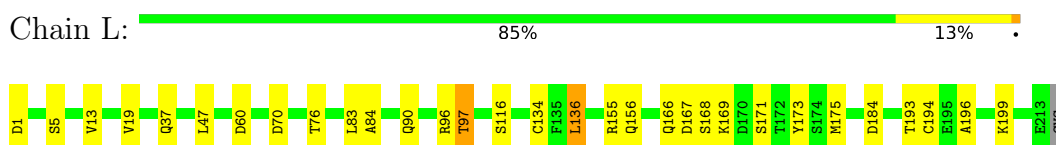
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	C	53	Total 53	O 53	0	0
3	D	47	Total 47	O 47	0	0
3	E	29	Total 29	O 29	0	0
3	F	39	Total 39	O 39	0	0

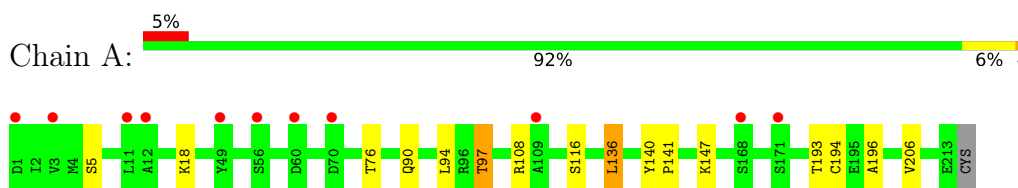
3 Residue-property plots [i](#)

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 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.

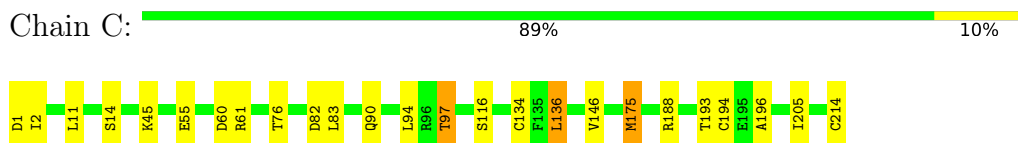
- Molecule 1: S25-2 Fab light chain



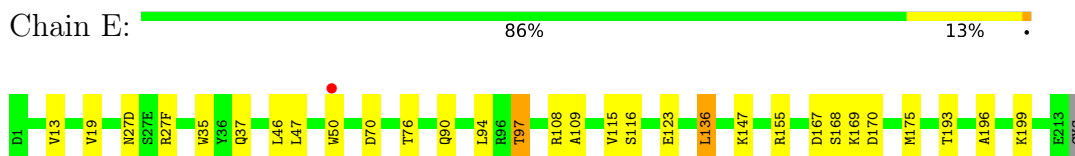
- Molecule 1: S25-2 Fab light chain



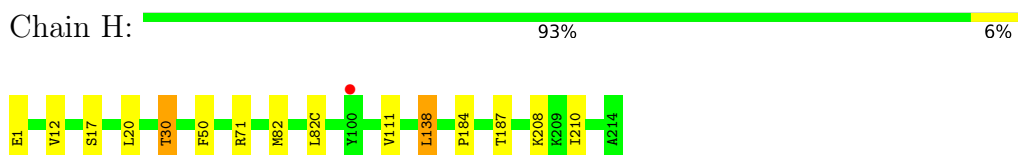
- Molecule 1: S25-2 Fab light chain



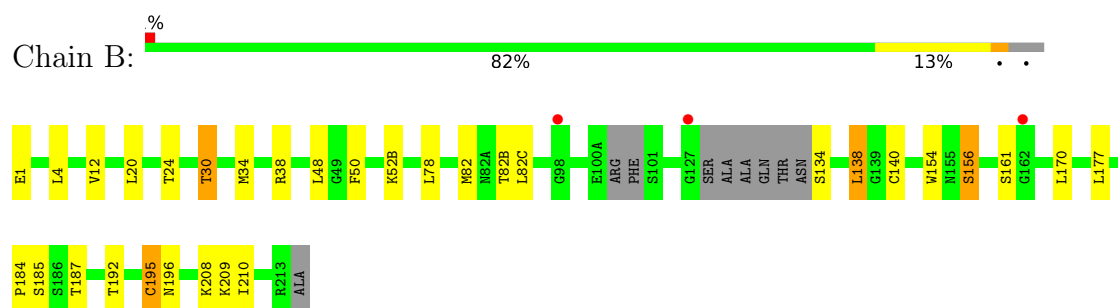
- Molecule 1: S25-2 Fab light chain



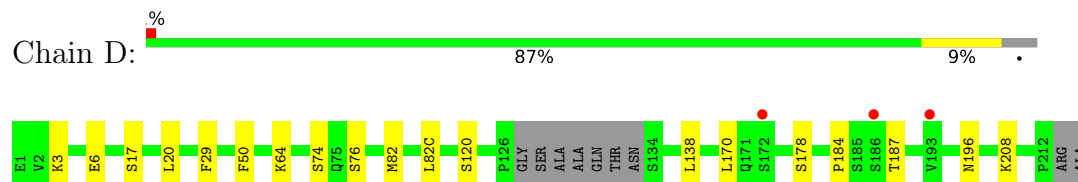
- Molecule 2: S25-2 Fab heavy chain



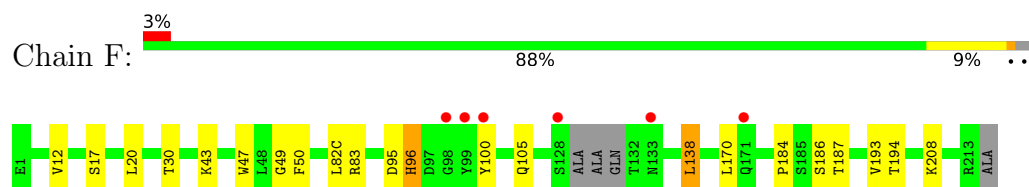
- Molecule 2: S25-2 Fab heavy chain



- Molecule 2: S25-2 Fab heavy chain



- Molecule 2: S25-2 Fab heavy chain



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	73.73Å 135.33Å 92.67Å 90.00° 94.35° 90.00°	Depositor
Resolution (Å)	40.00 – 2.15 38.45 – 2.15	Depositor EDS
% Data completeness (in resolution range)	99.7 (40.00-2.15) 99.7 (38.45-2.15)	Depositor EDS
R_{merge}	0.08	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.12 (at 2.14Å)	Xtrriage
Refinement program	REFMAC 5.8.0155	Depositor
R, R_{free}	0.230 , 0.281 0.234 , 0.283	Depositor DCC
R_{free} test set	4992 reflections (5.07%)	wwPDB-VP
Wilson B-factor (Å ²)	36.2	Xtrriage
Anisotropy	0.505	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.29 , 14.6	EDS
L-test for twinning ²	$\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.30$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	13697	wwPDB-VP
Average B, all atoms (Å ²)	44.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 6.88% of the height of the origin peak. No significant pseudotranslation is detected.*

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	0.53	0/1716	0.72	0/2327
1	C	0.63	0/1735	0.75	0/2351
1	E	0.58	0/1723	0.76	0/2336
1	L	0.54	0/1729	0.75	1/2343 (0.0%)
2	B	0.54	0/1670	0.73	0/2279
2	D	0.59	0/1687	0.75	0/2304
2	F	0.59	0/1723	0.78	0/2352
2	H	0.62	0/1748	0.78	1/2388 (0.0%)
All	All	0.58	0/13731	0.75	2/18680 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	L	96	ARG	NE-CZ-NH1	5.81	123.21	120.30
2	H	71	ARG	NE-CZ-NH1	5.77	123.18	120.30

There are no chirality outliers.

There are no planarity outliers.

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	1681	0	1625	5	0
1	C	1700	0	1649	9	0
1	E	1688	0	1633	12	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	L	1694	0	1644	7	0
2	B	1628	0	1581	16	0
2	D	1642	0	1595	4	0
2	F	1678	0	1629	8	0
2	H	1702	0	1653	6	0
3	A	14	0	0	0	0
3	B	13	0	0	0	0
3	C	53	0	0	2	0
3	D	47	0	0	0	0
3	E	29	0	0	0	0
3	F	39	0	0	1	0
3	H	64	0	0	2	0
3	L	25	0	0	0	0
All	All	13697	0	13009	65	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 2.

All (65) 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:L:13:VAL:HG11	1:L:19:VAL:HG12	1.69	0.72
1:C:90:GLN:HE21	1:C:97:THR:HG22	1.60	0.67
1:C:90:GLN:HE21	1:C:97:THR:CG2	2.08	0.66
1:L:90:GLN:HE21	1:L:97:THR:HG22	1.64	0.63
1:E:108:ARG:NH1	1:E:109:ALA:O	2.33	0.61
2:H:184:PRO:O	2:H:187:THR:HG22	2.02	0.60
1:A:90:GLN:HE21	1:A:97:THR:CG2	2.17	0.58
1:E:90:GLN:HE21	1:E:97:THR:CG2	2.17	0.57
1:L:90:GLN:HE21	1:L:97:THR:CG2	2.17	0.57
1:L:136:LEU:CD1	1:L:196:ALA:HB2	2.35	0.57
2:B:20:LEU:HD13	2:B:82:MET:CE	2.34	0.57
1:E:115:VAL:HG22	1:E:136:LEU:HD13	1.86	0.57
1:E:50:TRP:CZ2	2:F:100:TYR:HB3	2.41	0.55
1:E:136:LEU:HD11	1:E:196:ALA:HB2	1.88	0.55
2:B:12:VAL:HG11	2:B:82(C):LEU:HD13	1.88	0.54
1:C:205:ILE:HD11	3:C:353:HOH:O	2.09	0.53
2:F:95:ASP:O	2:F:96:HIS:HB2	2.09	0.52
2:D:82:MET:HB3	2:D:82(C):LEU:HD21	1.90	0.52
2:B:138:LEU:HG	2:B:210:ILE:HG21	1.91	0.51
1:E:37:GLN:HB2	1:E:47:LEU:HD11	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:30:THR:HG22	3:H:301:HOH:O	2.11	0.51
2:B:154:TRP:CZ3	2:B:195:CYS:HB3	2.46	0.51
1:E:13:VAL:HG21	1:E:19:VAL:HG13	1.93	0.51
2:H:138:LEU:HG	2:H:210:ILE:HG21	1.92	0.50
1:A:90:GLN:HE21	1:A:97:THR:HG22	1.76	0.50
2:F:184:PRO:O	2:F:187:THR:HG22	2.11	0.50
1:E:136:LEU:CD1	1:E:196:ALA:HB2	2.42	0.50
1:A:136:LEU:CD1	1:A:196:ALA:HB2	2.43	0.49
1:E:50:TRP:HZ2	2:F:100:TYR:HB3	1.76	0.49
2:H:82:MET:HE2	2:H:82(C):LEU:HD21	1.95	0.48
2:B:20:LEU:HD13	2:B:82:MET:HE2	1.96	0.48
2:D:184:PRO:O	2:D:187:THR:HG22	2.14	0.48
1:C:136:LEU:HD11	1:C:196:ALA:HB2	1.96	0.48
2:F:138:LEU:HD23	2:F:193:VAL:HG11	1.95	0.48
1:E:90:GLN:HE21	1:E:97:THR:HG23	1.77	0.48
1:C:146:VAL:HG21	1:C:175:MET:HE2	1.96	0.47
2:B:82:MET:HB3	2:B:82(C):LEU:HD21	1.96	0.47
1:A:193:THR:HG23	1:A:206:VAL:HG13	1.97	0.47
1:C:61:ARG:NH1	1:C:82:ASP:OD1	2.49	0.46
2:B:4:LEU:HD22	2:B:24:THR:HG22	1.98	0.46
1:C:136:LEU:CD1	1:C:196:ALA:HB2	2.46	0.46
1:L:167:ASP:O	1:L:171:SER:HA	2.16	0.45
2:D:6:GLU:OE1	2:D:6:GLU:N	2.49	0.45
2:H:30:THR:CG2	3:H:301:HOH:O	2.64	0.45
1:C:2:ILE:O	1:C:97:THR:HG21	2.17	0.45
2:B:156:SER:H	2:B:196:ASN:HD21	1.63	0.45
2:F:12:VAL:HG11	2:F:82(C):LEU:HD13	1.99	0.44
2:B:184:PRO:O	2:B:187:THR:HG22	2.18	0.43
1:E:35:TRP:O	1:E:46:LEU:HD12	2.18	0.42
1:E:167:ASP:OD1	1:E:168:SER:N	2.52	0.42
1:C:214:CYS:C	3:C:340:HOH:O	2.58	0.42
1:L:37:GLN:HB2	1:L:47:LEU:HD11	2.01	0.42
1:A:140:TYR:CG	1:A:141:PRO:HA	2.55	0.42
2:B:192:THR:HG23	2:B:209:LYS:HE3	2.00	0.42
1:L:166:GLN:HG3	1:L:173:TYR:CZ	2.55	0.42
2:D:29:PHE:CD2	2:D:76:SER:HA	2.55	0.41
2:B:12:VAL:HG11	2:B:82(C):LEU:CD1	2.50	0.41
2:B:38:ARG:HG2	2:B:48:LEU:HD21	2.02	0.41
2:F:96:HIS:HB3	3:F:309:HOH:O	2.20	0.41
2:B:30:THR:HG23	2:B:52(B):LYS:HB2	2.01	0.41
2:F:47:TRP:CH2	2:F:49:GLY:HA2	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:134:SER:O	2:B:185:SER:N	2.52	0.41
2:H:12:VAL:O	2:H:111:VAL:HA	2.21	0.41
2:B:20:LEU:HD13	2:B:82:MET:HE1	2.04	0.40
2:B:34:MET:HB3	2:B:78:LEU:HD22	2.04	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	216/219 (99%)	205 (95%)	11 (5%)	0	100	100
1	C	217/219 (99%)	210 (97%)	7 (3%)	0	100	100
1	E	216/219 (99%)	207 (96%)	7 (3%)	2 (1%)	17	11
1	L	216/219 (99%)	209 (97%)	5 (2%)	2 (1%)	17	11
2	B	208/223 (93%)	198 (95%)	9 (4%)	1 (0%)	29	22
2	D	210/223 (94%)	208 (99%)	2 (1%)	0	100	100
2	F	215/223 (96%)	207 (96%)	7 (3%)	1 (0%)	29	22
2	H	221/223 (99%)	217 (98%)	4 (2%)	0	100	100
All	All	1719/1768 (97%)	1661 (97%)	52 (3%)	6 (0%)	41	37

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	E	27(F)	ARG
2	F	96	HIS
1	L	84	ALA
1	L	169	LYS
2	B	156	SER
1	E	169	LYS

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	191/195 (98%)	181 (95%)	10 (5%)	23	19
1	C	195/195 (100%)	178 (91%)	17 (9%)	10	6
1	E	193/195 (99%)	179 (93%)	14 (7%)	14	9
1	L	194/195 (100%)	176 (91%)	18 (9%)	9	5
2	B	183/190 (96%)	172 (94%)	11 (6%)	19	14
2	D	185/190 (97%)	173 (94%)	12 (6%)	17	12
2	F	189/190 (100%)	177 (94%)	12 (6%)	18	13
2	H	190/190 (100%)	183 (96%)	7 (4%)	34	32
All	All	1520/1540 (99%)	1419 (93%)	101 (7%)	16	11

All (101) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	L	1	ASP
1	L	5	SER
1	L	60	ASP
1	L	70	ASP
1	L	76	THR
1	L	83	LEU
1	L	97	THR
1	L	116	SER
1	L	134	CYS
1	L	136	LEU
1	L	155	ARG
1	L	156	GLN
1	L	168	SER
1	L	175	MET
1	L	184	ASP
1	L	193	THR
1	L	194	CYS
1	L	199	LYS
2	H	1	GLU

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Mol	Chain	Res	Type
2	H	17	SER
2	H	20	LEU
2	H	30	THR
2	H	50	PHE
2	H	138	LEU
2	H	208	LYS
1	A	5	SER
1	A	18	LYS
1	A	76	THR
1	A	94	LEU
1	A	97	THR
1	A	108	ARG
1	A	116	SER
1	A	136	LEU
1	A	147	LYS
1	A	194	CYS
2	B	1	GLU
2	B	30	THR
2	B	50	PHE
2	B	82(B)	THR
2	B	138	LEU
2	B	140	CYS
2	B	161	SER
2	B	170	LEU
2	B	177	LEU
2	B	195	CYS
2	B	208	LYS
1	C	1	ASP
1	C	11	LEU
1	C	14	SER
1	C	45	LYS
1	C	55	GLU
1	C	60	ASP
1	C	76	THR
1	C	83	LEU
1	C	94	LEU
1	C	97	THR
1	C	116	SER
1	C	134	CYS
1	C	136	LEU
1	C	175	MET
1	C	188	ARG

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Mol	Chain	Res	Type
1	C	193	THR
1	C	194	CYS
2	D	3	LYS
2	D	17	SER
2	D	20	LEU
2	D	50	PHE
2	D	64	LYS
2	D	74	SER
2	D	120	SER
2	D	138	LEU
2	D	170	LEU
2	D	178	SER
2	D	196	ASN
2	D	208	LYS
1	E	27(D)	ASN
1	E	70	ASP
1	E	76	THR
1	E	94	LEU
1	E	97	THR
1	E	116	SER
1	E	123	GLU
1	E	136	LEU
1	E	147	LYS
1	E	155	ARG
1	E	170	ASP
1	E	175	MET
1	E	193	THR
1	E	199	LYS
2	F	17	SER
2	F	20	LEU
2	F	30	THR
2	F	43	LYS
2	F	50	PHE
2	F	83	ARG
2	F	105	GLN
2	F	138	LEU
2	F	170	LEU
2	F	186	SER
2	F	194	THR
2	F	208	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	L	42	GLN
2	B	196	ASN
1	C	42	GLN
1	C	93	ASN
2	D	96	HIS
1	E	79	GLN
2	F	105	GLN
2	F	164	HIS

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 [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(Å ²)	Q<0.9
1	A	218/219 (99%)	0.38	11 (5%) 28 37	35, 58, 79, 92	0
1	C	219/219 (100%)	-0.26	0 100 100	25, 37, 58, 70	0
1	E	218/219 (99%)	-0.02	1 (0%) 91 93	27, 46, 68, 86	0
1	L	218/219 (99%)	-0.02	0 100 100	27, 46, 73, 91	0
2	B	214/223 (95%)	-0.04	3 (1%) 75 80	28, 44, 69, 85	0
2	D	214/223 (95%)	-0.12	3 (1%) 75 80	23, 38, 70, 91	0
2	F	219/223 (98%)	-0.13	6 (2%) 54 63	25, 36, 62, 86	0
2	H	223/223 (100%)	-0.21	1 (0%) 92 94	20, 33, 54, 80	0
All	All	1743/1768 (98%)	-0.06	25 (1%) 75 80	20, 42, 70, 92	0

All (25) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	B	162	GLY	4.0
2	F	171	GLN	3.6
2	B	98	GLY	3.2
1	A	49	TYR	3.1
1	A	109	ALA	2.9
1	A	60	ASP	2.9
1	A	168	SER	2.7
2	F	98	GLY	2.7
1	A	11	LEU	2.6
2	B	127	GLY	2.5
1	A	1	ASP	2.5
1	E	50	TRP	2.5
2	F	133	ASN	2.4
2	F	100	TYR	2.4
1	A	70	ASP	2.3
2	D	186	SER	2.3

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Mol	Chain	Res	Type	RSRZ
2	H	100	TYR	2.2
1	A	3	VAL	2.2
2	F	128	SER	2.2
2	D	172	SER	2.2
1	A	171	SER	2.1
1	A	56	SER	2.1
1	A	12	ALA	2.1
2	F	99	TYR	2.1
2	D	193	VAL	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.