



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 9, 2026 – 04:33 PM UTC

PDB ID : 2CFX / pdb_00002cfx
Title : Structure of B.subtilis LrpC
Authors : Thaw, P.; Rafferty, J.B.
Deposited on : 2006-02-24
Resolution : 2.40 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 : 4-5-2 with Phenix2.0
Xtrriage (Phenix) : 2.0
EDS : 3.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4 : 9.0.010 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

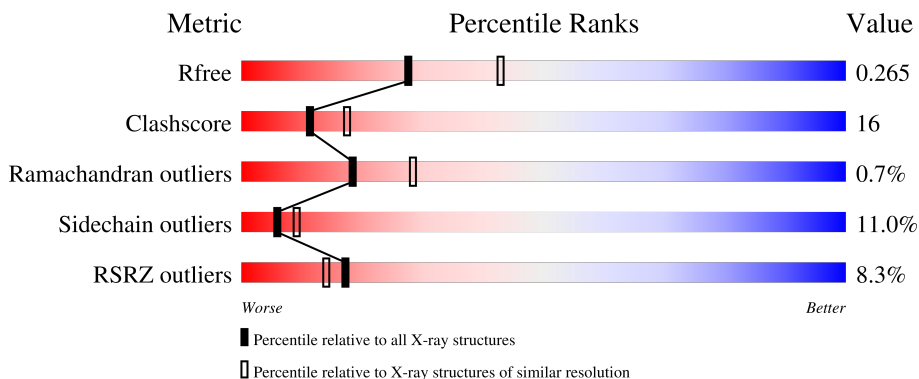
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.40 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.



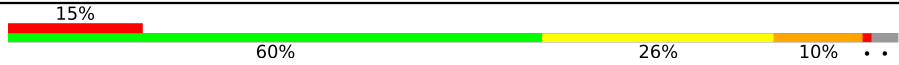

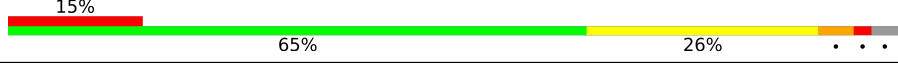
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	180053	4912 (2.40-2.40)
Clashscore	190562	5391 (2.40-2.40)
Ramachandran outliers	187476	5320 (2.40-2.40)
Sidechain outliers	187428	5321 (2.40-2.40)
RSRZ outliers	180081	4916 (2.40-2.40)

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	144	
1	B	144	
1	C	144	
1	D	144	
1	E	144	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
1	F	144	
1	G	144	
1	H	144	

2 Entry composition [i](#)

There are 2 unique types of molecules in this entry. The entry contains 9002 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 HTH-TYPE TRANSCRIPTIONAL REGULATOR LRPC.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	140	1104	703	180	215	6	0	0	0
1	B	140	1076	686	171	213	6	0	0	0
1	C	140	1098	700	177	215	6	0	0	0
1	D	140	1080	689	171	214	6	0	0	0
1	E	140	1104	703	180	215	6	0	0	0
1	F	140	1076	686	170	214	6	0	0	0
1	G	140	1094	697	176	215	6	0	0	0
1	H	140	1076	686	171	213	6	0	0	0

- Molecule 2 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	45	Total 45	O 45	0	0
2	B	36	Total 36	O 36	0	0
2	C	41	Total 41	O 41	0	0
2	D	27	Total 27	O 27	0	0
2	E	36	Total 36	O 36	0	0
2	F	33	Total 33	O 33	0	0

Continued on next page...

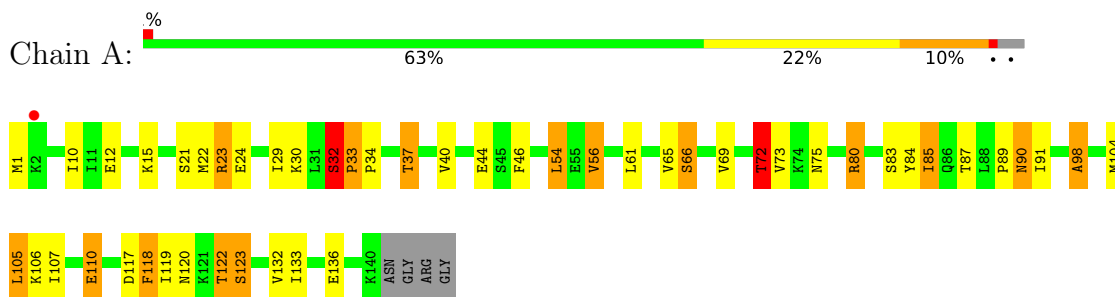
Continued from previous page...

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	G	37	Total	O	0	0
			37	37		
2	H	39	Total	O	0	0
			39	39		

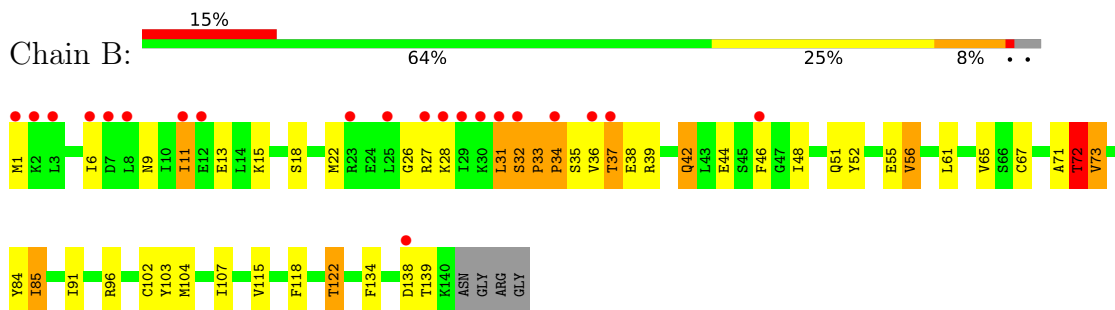
3 Residue-property plots

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.

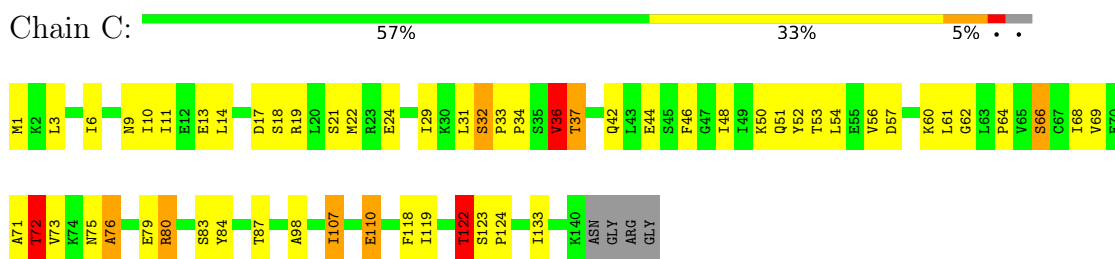
- Molecule 1: HTH-TYPE TRANSCRIPTIONAL REGULATOR LRPC



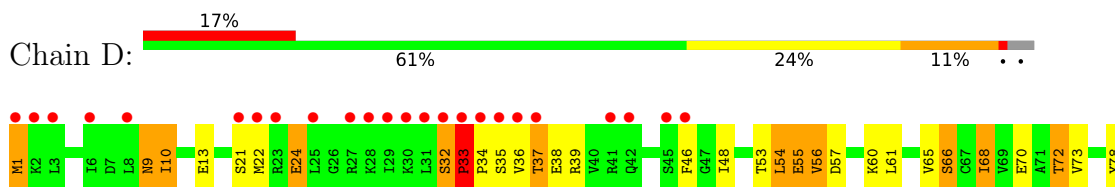
- Molecule 1: HTH-TYPE TRANSCRIPTIONAL REGULATOR LRPC

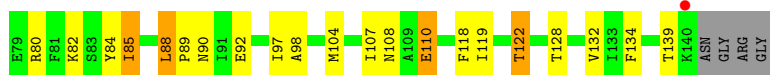


- Molecule 1: HTH-TYPE TRANSCRIPTIONAL REGULATOR LRPC



- Molecule 1: HTH-TYPE TRANSCRIPTIONAL REGULATOR LRPC

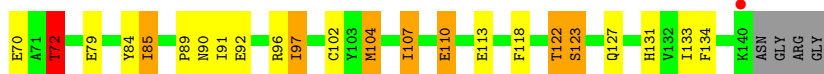




● Molecule 1: HTH-TYPE TRANSCRIPTIONAL REGULATOR LRPC



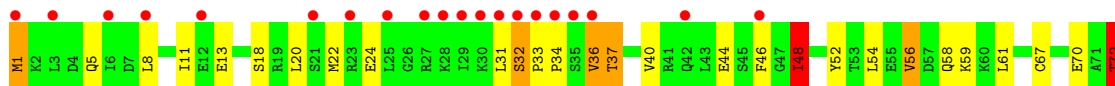
● Molecule 1: HTH-TYPE TRANSCRIPTIONAL REGULATOR LRPC



● Molecule 1: HTH-TYPE TRANSCRIPTIONAL REGULATOR LRPC



● Molecule 1: HTH-TYPE TRANSCRIPTIONAL REGULATOR LRPC



4 Data and refinement statistics i

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, α , β , γ	165.83Å 166.15Å 155.77Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	119.52 – 2.40 117.37 – 2.40	Depositor EDS
% Data completeness (in resolution range)	99.3 (119.52-2.40) 99.3 (117.37-2.40)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.09 (at 2.39Å)	Xtrriage
Refinement program	REFMAC 5.2.0005	Depositor
R, R_{free}	0.215 , 0.266 0.213 , 0.265	Depositor DCC
R_{free} test set	4163 reflections (4.99%)	wwPDB-VP
Wilson B-factor (Å ²)	38.6	Xtrriage
Anisotropy	0.197	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.35 , 38.6	EDS
L-test for twinning ²	$\langle L \rangle = 0.52$, $\langle L^2 \rangle = 0.36$	Xtrriage
Estimated twinning fraction	0.047 for -k,-h,-l	Xtrriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	9002	wwPDB-VP
Average B, all atoms (Å ²)	44.0	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 46.22 % 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 1.1813e-04. 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	1.60	13/1120 (1.2%)	1.54	13/1515 (0.9%)
1	B	1.45	9/1092 (0.8%)	1.42	8/1484 (0.5%)
1	C	1.58	9/1114 (0.8%)	1.46	9/1508 (0.6%)
1	D	1.51	7/1096 (0.6%)	1.39	8/1488 (0.5%)
1	E	1.54	6/1120 (0.5%)	1.45	8/1515 (0.5%)
1	F	1.44	4/1092 (0.4%)	1.43	11/1484 (0.7%)
1	G	1.58	5/1110 (0.5%)	1.49	9/1504 (0.6%)
1	H	1.51	7/1092 (0.6%)	1.37	10/1484 (0.7%)
All	All	1.53	60/8836 (0.7%)	1.44	76/11982 (0.6%)

All (60) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	85	ILE	CA-CB	8.51	1.67	1.54
1	A	120	ASN	C-O	-7.98	1.14	1.24
1	F	85	ILE	CA-CB	7.97	1.64	1.54
1	D	65	VAL	CA-CB	7.07	1.62	1.54
1	C	107	ILE	CA-CB	6.95	1.64	1.54
1	G	135	SER	C-O	-6.90	1.17	1.24
1	G	107	ILE	CA-CB	6.68	1.62	1.54
1	D	92	GLU	N-CA	-6.62	1.38	1.46
1	A	91	ILE	CA-CB	6.59	1.60	1.53
1	H	85	ILE	CA-CB	6.52	1.62	1.54
1	H	115	VAL	CA-CB	6.33	1.61	1.54
1	C	122	THR	CA-CB	6.30	1.64	1.53
1	B	115	VAL	CA-CB	6.17	1.61	1.54
1	A	110	GLU	CG-CD	6.13	1.67	1.52
1	E	79	GLU	CG-CD	6.00	1.67	1.52
1	A	72	THR	CA-CB	5.99	1.62	1.53
1	C	72	THR	N-CA	-5.97	1.39	1.46
1	D	68	ILE	CA-CB	5.88	1.61	1.54
1	C	69	VAL	C-O	-5.83	1.17	1.24
1	A	98	ALA	CA-C	-5.74	1.45	1.52

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	80	ARG	C-O	-5.72	1.17	1.24
1	D	80	ARG	CZ-NH1	5.70	1.40	1.32
1	A	10	ILE	CA-CB	5.69	1.61	1.54
1	A	85	ILE	CA-CB	5.69	1.61	1.54
1	B	71	ALA	CA-C	-5.67	1.46	1.52
1	C	79	GLU	C-O	-5.63	1.17	1.24
1	F	79	GLU	CG-CD	5.59	1.66	1.52
1	H	132	VAL	N-CA	-5.56	1.39	1.46
1	D	110	GLU	CG-CD	5.54	1.65	1.52
1	G	139	THR	CA-CB	5.51	1.61	1.53
1	C	54	LEU	C-O	-5.48	1.17	1.23
1	E	53	THR	CA-CB	5.46	1.61	1.53
1	B	65	VAL	CA-C	5.42	1.59	1.52
1	A	118	PHE	C-O	-5.41	1.17	1.24
1	F	92	GLU	N-CA	-5.39	1.39	1.46
1	E	36	VAL	CA-CB	5.35	1.60	1.54
1	G	122	THR	CA-CB	5.35	1.63	1.53
1	D	132	VAL	N-CA	-5.34	1.39	1.46
1	B	139	THR	CA-C	5.33	1.59	1.52
1	D	66	SER	C-O	-5.33	1.17	1.23
1	B	65	VAL	CA-CB	5.31	1.60	1.54
1	A	132	VAL	CA-CB	5.24	1.59	1.54
1	H	67	CYS	C-O	-5.24	1.17	1.23
1	B	67	CYS	CA-C	-5.22	1.46	1.52
1	A	65	VAL	C-O	-5.21	1.18	1.24
1	G	121	LYS	C-O	5.17	1.30	1.24
1	C	71	ALA	CA-C	5.16	1.58	1.52
1	H	72	THR	CB-CG2	-5.13	1.35	1.52
1	H	113	GLU	CG-CD	5.13	1.64	1.52
1	A	106	LYS	C-O	-5.13	1.17	1.24
1	C	72	THR	CA-CB	5.12	1.61	1.53
1	E	72	THR	CA-CB	5.12	1.61	1.53
1	H	84	TYR	C-O	-5.11	1.18	1.24
1	C	11	ILE	CA-CB	5.10	1.60	1.54
1	E	29	ILE	CA-CB	5.10	1.61	1.54
1	A	54	LEU	C-O	-5.06	1.17	1.24
1	B	6	ILE	CA-CB	5.06	1.60	1.54
1	F	104	MET	N-CA	-5.05	1.40	1.46
1	E	104	MET	CA-C	-5.05	1.46	1.52
1	B	73	VAL	CA-C	5.02	1.58	1.52

All (76) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	33	PRO	CA-C-N	-8.97	110.50	119.56
1	A	33	PRO	C-N-CA	-8.97	110.50	119.56
1	B	32	SER	CA-C-N	8.35	128.97	120.38
1	B	32	SER	C-N-CA	8.35	128.97	120.38
1	H	33	PRO	N-CA-C	8.24	120.75	110.70
1	A	104	MET	CG-SD-CE	-8.11	83.05	100.90
1	B	33	PRO	N-CA-C	7.76	120.17	110.70
1	A	32	SER	CA-C-N	-7.44	112.72	120.38
1	A	32	SER	C-N-CA	-7.44	112.72	120.38
1	F	123	SER	CA-C-N	-7.43	111.98	119.56
1	F	123	SER	C-N-CA	-7.43	111.98	119.56
1	C	36	VAL	CB-CA-C	-7.19	102.60	112.02
1	B	104	MET	CG-SD-CE	-7.00	85.50	100.90
1	F	72	THR	CB-CA-C	6.89	121.60	110.16
1	F	33	PRO	N-CA-C	6.81	119.01	110.70
1	H	58	GLN	N-CA-C	6.63	118.51	111.28
1	D	88	LEU	N-CA-C	6.29	118.99	110.31
1	B	44	GLU	N-CA-C	6.24	118.16	111.36
1	H	99	GLY	N-CA-C	-6.21	98.47	113.18
1	G	117	ASP	N-CA-C	6.20	118.54	111.11
1	G	33	PRO	CA-C-N	-6.19	113.38	119.64
1	G	33	PRO	C-N-CA	-6.19	113.38	119.64
1	C	72	THR	CB-CA-C	6.13	119.88	110.62
1	E	129	VAL	N-CA-C	-6.08	99.60	108.11
1	C	76	ALA	N-CA-C	-6.07	104.47	112.24
1	D	78	TYR	N-CA-C	5.99	117.80	111.28
1	F	59	LYS	N-CA-C	-5.98	104.84	111.36
1	G	96	ARG	NE-CZ-NH1	-5.95	115.55	121.50
1	B	48	ILE	N-CA-C	-5.90	104.57	110.30
1	A	119	ILE	CB-CA-C	-5.89	104.43	111.97
1	H	32	SER	CA-C-N	5.87	126.43	120.38
1	H	32	SER	C-N-CA	5.87	126.43	120.38
1	A	72	THR	CB-CA-C	5.82	119.41	110.62
1	B	72	THR	CB-CA-C	5.82	119.82	110.16
1	E	117	ASP	N-CA-C	5.81	117.61	111.28
1	C	72	THR	N-CA-CB	5.74	119.56	110.84
1	C	119	ILE	CB-CA-C	-5.71	104.67	111.81
1	G	88	LEU	CA-C-N	-5.71	114.71	120.31
1	G	88	LEU	C-N-CA	-5.71	114.71	120.31
1	C	44	GLU	CB-CA-C	5.66	121.92	110.38
1	G	70	GLU	N-CA-CB	-5.63	100.86	110.16
1	C	32	SER	CA-C-N	-5.63	114.58	120.38
1	C	32	SER	C-N-CA	-5.63	114.58	120.38

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	67	CYS	N-CA-C	5.59	118.19	109.52
1	G	44	GLU	N-CA-CB	5.52	118.80	110.30
1	F	32	SER	CA-C-N	5.51	126.06	120.38
1	F	32	SER	C-N-CA	5.51	126.06	120.38
1	H	59	LYS	N-CA-C	-5.49	105.30	111.28
1	E	104	MET	CG-SD-CE	-5.48	88.84	100.90
1	A	90	ASN	N-CA-C	5.45	119.88	113.23
1	F	59	LYS	N-CA-CB	5.45	118.23	110.16
1	F	44	GLU	N-CA-C	5.39	117.15	111.28
1	E	36	VAL	CB-CA-C	-5.38	105.08	111.97
1	B	11	ILE	N-CA-C	5.38	115.52	110.30
1	D	32	SER	CA-C-N	5.36	125.90	120.38
1	D	32	SER	C-N-CA	5.36	125.90	120.38
1	E	50	LYS	N-CA-C	-5.34	106.45	113.12
1	A	117	ASP	N-CA-C	5.33	117.09	111.28
1	H	122	THR	N-CA-C	5.33	119.78	113.28
1	D	55	GLU	CB-CA-C	5.31	118.94	109.38
1	H	88	LEU	N-CA-C	5.30	117.31	109.62
1	C	110	GLU	N-CA-C	5.23	116.98	111.28
1	E	6	ILE	CB-CA-C	-5.18	105.07	112.22
1	D	33	PRO	N-CA-C	5.17	117.01	110.70
1	A	110	GLU	CB-CG-CD	5.17	121.39	112.60
1	D	119	ILE	N-CA-CB	5.14	116.56	110.55
1	D	80	ARG	NE-CZ-NH2	-5.10	114.61	119.20
1	A	123	SER	CA-C-N	-5.10	114.36	119.56
1	A	123	SER	C-N-CA	-5.10	114.36	119.56
1	H	48	ILE	N-CA-C	-5.10	106.10	110.74
1	E	105	LEU	CB-CG-CD1	-5.07	95.48	110.70
1	A	80	ARG	NE-CZ-NH2	5.04	123.74	119.20
1	H	78	TYR	N-CA-C	5.04	116.86	111.36
1	E	83	SER	CB-CA-C	-5.04	102.75	110.81
1	F	92	GLU	N-CA-C	5.02	116.75	111.28
1	F	97	ILE	N-CA-C	5.01	116.56	108.85

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	1104	0	1110	30	0
1	B	1076	0	1051	42	0
1	C	1098	0	1099	49	0
1	D	1080	0	1060	34	0
1	E	1104	0	1110	33	0
1	F	1076	0	1049	45	0
1	G	1094	0	1088	33	0
1	H	1076	0	1051	32	0
2	A	45	0	0	2	1
2	B	36	0	0	6	0
2	C	41	0	0	2	0
2	D	27	0	0	2	0
2	E	36	0	0	0	0
2	F	33	0	0	8	0
2	G	37	0	0	7	1
2	H	39	0	0	3	0
All	All	9002	0	8618	281	2

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 16.

All (281) 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:H:138:ASP:HB3	2:H:2039:HOH:O	1.12	1.23
1:B:138:ASP:HB3	2:B:2035:HOH:O	1.46	1.13
1:A:33:PRO:O	1:A:37:THR:HG23	1.55	1.06
1:H:118:PHE:O	1:H:122:THR:HG23	1.56	1.03
1:B:118:PHE:O	1:B:122:THR:HG23	1.62	0.97
1:A:75:ASN:HD22	1:A:80:ARG:HH22	0.96	0.95
1:E:56:VAL:HG11	1:E:61:LEU:HD12	1.50	0.93
1:A:21:SER:OG	1:A:24:GLU:HG2	1.69	0.92
1:F:22:MET:HE2	1:F:22:MET:HA	1.47	0.92
1:D:33:PRO:HB2	1:D:34:PRO:HD3	1.47	0.92
1:E:56:VAL:CG1	1:E:61:LEU:HD12	2.00	0.91
1:H:1:MET:HE2	1:H:46:PHE:CD1	2.05	0.91
1:D:118:PHE:O	1:D:122:THR:HG23	1.73	0.89
1:E:56:VAL:HG11	1:E:61:LEU:CD1	2.05	0.87
1:B:9:ASN:O	1:B:13:GLU:HB2	1.74	0.86

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:75:ASN:HD22	1:C:80:ARG:NH2	1.72	0.86
1:B:72:THR:HG21	2:B:2021:HOH:O	1.76	0.84
1:C:22:MET:HE2	1:C:22:MET:HA	1.58	0.84
1:A:75:ASN:HD22	1:A:80:ARG:NH2	1.75	0.84
1:F:118:PHE:O	1:F:122:THR:HG23	1.78	0.84
1:G:22:MET:HG3	1:G:37:THR:HG22	1.60	0.83
1:C:72:THR:HG21	2:C:2027:HOH:O	1.78	0.83
1:D:34:PRO:HA	1:D:37:THR:HG23	1.59	0.83
1:A:75:ASN:ND2	1:A:80:ARG:HH22	1.77	0.82
1:D:1:MET:HE2	1:D:46:PHE:CD1	2.14	0.82
1:E:21:SER:OG	1:E:24:GLU:HG3	1.80	0.82
1:A:72:THR:HG21	2:A:2028:HOH:O	1.80	0.82
1:E:22:MET:HG3	1:E:37:THR:HG22	1.61	0.81
1:A:118:PHE:O	1:A:122:THR:HG23	1.81	0.81
1:C:33:PRO:O	1:C:37:THR:HG23	1.82	0.79
1:G:110:GLU:HG3	2:G:2025:HOH:O	1.82	0.79
1:E:118:PHE:O	1:E:122:THR:HG23	1.82	0.79
1:H:84:TYR:OH	1:H:122:THR:HG22	1.82	0.79
1:F:66:SER:HB3	1:F:133:ILE:HD12	1.62	0.79
1:F:22:MET:HG3	1:F:37:THR:HG23	1.65	0.78
1:E:84:TYR:OH	1:E:122:THR:HG22	1.86	0.76
1:B:56:VAL:HG11	1:B:61:LEU:CD1	2.16	0.75
1:A:40:VAL:O	1:A:44:GLU:HG3	1.87	0.74
1:B:118:PHE:O	1:B:122:THR:CG2	2.35	0.74
1:C:110:GLU:HG3	2:C:2032:HOH:O	1.87	0.74
1:D:118:PHE:O	1:D:122:THR:CG2	2.36	0.73
1:F:91:ILE:HD13	1:F:107:ILE:HG13	1.71	0.73
1:G:118:PHE:O	1:G:122:THR:HG23	1.87	0.73
1:B:31:LEU:HD22	1:B:32:SER:H	1.54	0.73
1:B:56:VAL:CG1	1:B:61:LEU:HD12	2.19	0.72
1:F:97:ILE:HD13	1:F:104:MET:HE2	1.71	0.72
1:F:72:THR:CG2	2:F:2003:HOH:O	2.37	0.72
1:G:118:PHE:O	1:G:122:THR:CG2	2.37	0.71
1:B:56:VAL:CG1	1:B:61:LEU:CD1	2.68	0.71
1:C:56:VAL:HG11	1:C:61:LEU:CD1	2.19	0.71
1:G:22:MET:CG	1:G:37:THR:HG22	2.22	0.69
1:C:84:TYR:CE2	1:C:122:THR:HB	2.28	0.69
1:F:1:MET:HE2	1:F:46:PHE:HD1	1.58	0.69
1:G:33:PRO:O	1:G:37:THR:HG23	1.93	0.69
1:H:118:PHE:O	1:H:122:THR:CG2	2.35	0.69
1:D:1:MET:HE2	1:D:46:PHE:HD1	1.56	0.69

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:68:ILE:HG21	1:H:104:MET:HE3	1.75	0.68
1:A:84:TYR:OH	1:A:122:THR:HG22	1.94	0.68
1:D:33:PRO:HB2	1:D:34:PRO:CD	2.23	0.67
1:C:22:MET:HB3	1:C:37:THR:HG22	1.77	0.67
1:G:21:SER:OG	1:G:24:GLU:HG3	1.93	0.66
1:D:134:PHE:CZ	1:G:98:ALA:HB2	2.29	0.66
1:G:96:ARG:NH1	2:G:2019:HOH:O	2.27	0.66
1:A:23:ARG:HG2	1:A:23:ARG:HH11	1.60	0.65
1:F:72:THR:HG21	2:F:2015:HOH:O	1.97	0.65
1:G:56:VAL:HG11	1:G:61:LEU:HD11	1.77	0.65
1:F:72:THR:HG22	2:F:2003:HOH:O	1.96	0.65
1:E:56:VAL:CG1	1:E:61:LEU:CD1	2.70	0.64
1:A:33:PRO:O	1:A:37:THR:CG2	2.40	0.64
1:C:62:GLY:C	1:C:64:PRO:HD3	2.23	0.64
1:C:33:PRO:HD2	1:C:34:PRO:HD2	1.80	0.64
1:C:56:VAL:HG11	1:C:61:LEU:HD11	1.80	0.63
1:B:91:ILE:CD1	1:B:107:ILE:HG22	2.28	0.63
1:F:113:GLU:HB2	2:F:2021:HOH:O	1.98	0.63
1:E:22:MET:CG	1:E:37:THR:HG22	2.27	0.63
1:A:66:SER:HB3	1:A:133:ILE:HD12	1.81	0.62
1:D:57:ASP:OD2	1:D:60:LYS:HD2	1.99	0.62
1:F:91:ILE:CD1	1:F:107:ILE:HG13	2.29	0.62
1:A:1:MET:HE2	1:A:46:PHE:CD1	2.35	0.62
1:F:84:TYR:OH	1:F:122:THR:HG22	2.00	0.61
1:E:83:SER:O	1:E:87:THR:HG23	2.01	0.60
1:B:56:VAL:HG11	1:B:61:LEU:HD11	1.84	0.60
1:C:84:TYR:HE2	1:C:122:THR:HB	1.65	0.60
1:B:72:THR:CG2	2:B:2007:HOH:O	2.50	0.60
1:C:56:VAL:HG11	1:C:61:LEU:HD12	1.82	0.60
1:H:40:VAL:O	1:H:44:GLU:HG3	2.02	0.60
1:B:84:TYR:OH	1:B:122:THR:HG22	2.02	0.59
1:A:56:VAL:HG13	1:A:61:LEU:HD12	1.86	0.58
1:B:22:MET:HA	1:B:22:MET:HE2	1.85	0.57
1:G:89:PRO:O	1:G:90:ASN:HB2	2.02	0.57
1:B:31:LEU:CD2	1:B:32:SER:H	2.16	0.57
1:G:56:VAL:HG11	1:G:61:LEU:CD1	2.34	0.57
1:F:4:ASP:OD1	1:F:39:ARG:NH2	2.37	0.57
1:H:5:GLN:OE1	1:H:5:GLN:HA	2.04	0.57
1:H:56:VAL:CG1	1:H:61:LEU:CD1	2.82	0.57
1:B:56:VAL:CG1	1:B:61:LEU:HD11	2.34	0.57
1:C:118:PHE:O	1:C:122:THR:CG2	2.52	0.57

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:84:TYR:CE2	1:D:122:THR:HB	2.39	0.56
1:C:53:THR:O	1:H:18:SER:HB3	2.05	0.56
1:C:118:PHE:O	1:C:122:THR:HG23	2.05	0.56
1:F:110:GLU:HG3	2:F:2019:HOH:O	2.06	0.56
1:D:22:MET:HE2	1:D:22:MET:HA	1.88	0.56
1:D:33:PRO:CB	1:D:34:PRO:HD3	2.30	0.56
1:E:70:GLU:O	1:E:128:THR:HA	2.05	0.56
1:A:23:ARG:HG2	1:A:23:ARG:NH1	2.20	0.55
1:B:72:THR:HG22	2:B:2007:HOH:O	2.07	0.55
1:C:32:SER:O	1:C:36:VAL:HG23	2.06	0.55
1:F:22:MET:HE2	1:F:22:MET:CA	2.30	0.55
1:F:1:MET:HE2	1:F:46:PHE:CD1	2.41	0.55
1:F:118:PHE:O	1:F:122:THR:CG2	2.51	0.55
1:F:131:HIS:ND1	2:F:2027:HOH:O	2.33	0.55
1:A:56:VAL:CG1	1:A:61:LEU:HD12	2.38	0.54
1:F:57:ASP:OD2	1:F:60:LYS:HD2	2.08	0.54
1:H:75:ASN:HD22	1:H:80:ARG:HH22	1.56	0.54
1:E:33:PRO:O	1:E:37:THR:HG23	2.08	0.54
1:G:22:MET:HA	1:G:22:MET:HE2	1.90	0.54
1:A:15:LYS:O	1:B:51:GLN:NE2	2.41	0.54
1:A:84:TYR:CE2	1:A:122:THR:HB	2.43	0.54
1:C:83:SER:O	1:C:87:THR:HG23	2.07	0.54
1:F:22:MET:HG3	1:F:37:THR:CG2	2.35	0.54
1:C:75:ASN:HD22	1:C:80:ARG:HH22	1.54	0.54
1:B:1:MET:HE2	1:B:46:PHE:CD1	2.44	0.53
1:C:29:ILE:HD11	1:C:31:LEU:HD12	1.89	0.53
1:H:56:VAL:HG11	1:H:61:LEU:CD1	2.39	0.53
1:B:38:GLU:OE1	1:B:38:GLU:HA	2.09	0.53
1:D:139:THR:HB	2:G:2016:HOH:O	2.09	0.53
1:E:118:PHE:O	1:E:122:THR:CG2	2.55	0.53
1:H:56:VAL:CG1	1:H:61:LEU:HD12	2.39	0.53
1:D:54:LEU:HD13	1:G:14:LEU:HB3	1.90	0.52
1:A:69:VAL:HB	1:A:105:LEU:HD11	1.90	0.52
1:G:84:TYR:CE2	1:G:122:THR:HB	2.45	0.52
1:A:118:PHE:O	1:A:122:THR:CG2	2.54	0.52
1:B:11:ILE:HG22	1:B:15:LYS:HE2	1.91	0.52
1:B:26:GLY:C	1:B:28:LYS:H	2.17	0.52
1:G:9:ASN:O	1:G:13:GLU:HB2	2.10	0.52
1:D:82:LYS:HG3	1:G:137:ILE:HD13	1.92	0.52
1:F:22:MET:HA	1:F:22:MET:CE	2.30	0.52
1:F:32:SER:HB2	1:F:34:PRO:HD2	1.92	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:72:THR:HG21	2:H:2019:HOH:O	2.09	0.52
1:D:70:GLU:HG2	1:D:104:MET:SD	2.50	0.52
1:D:72:THR:CG2	2:D:2002:HOH:O	2.58	0.51
1:G:110:GLU:CG	2:G:2025:HOH:O	2.48	0.51
1:F:18:SER:OG	1:F:52:TYR:HD2	1.94	0.51
1:B:31:LEU:HD22	1:B:32:SER:N	2.24	0.51
1:E:98:ALA:HB2	1:F:134:PHE:CZ	2.46	0.51
1:E:54:LEU:HB3	1:F:15:LYS:HG2	1.92	0.51
1:C:123:SER:N	1:C:124:PRO:HD2	2.25	0.51
1:C:6:ILE:HA	1:C:9:ASN:ND2	2.26	0.51
1:C:17:ASP:OD1	1:C:19:ARG:HB2	2.11	0.51
1:B:91:ILE:HD13	1:B:107:ILE:HG22	1.92	0.51
1:G:97:ILE:HD13	1:G:104:MET:HE2	1.93	0.50
1:H:22:MET:HG3	1:H:37:THR:HB	1.93	0.50
1:E:84:TYR:CE2	1:E:122:THR:HB	2.46	0.50
1:H:84:TYR:CE2	1:H:122:THR:HB	2.46	0.50
1:C:1:MET:CE	1:C:46:PHE:HB2	2.41	0.50
1:G:118:PHE:O	1:G:122:THR:HG22	2.11	0.50
1:A:32:SER:HB2	1:A:34:PRO:HD2	1.93	0.50
1:D:98:ALA:HB2	1:G:134:PHE:CZ	2.46	0.50
1:F:72:THR:HG23	2:F:2003:HOH:O	2.06	0.50
1:G:40:VAL:O	1:G:44:GLU:HG2	2.12	0.50
1:A:22:MET:HB3	1:A:37:THR:HG22	1.94	0.50
1:B:118:PHE:CE1	1:B:122:THR:HG21	2.47	0.50
1:D:38:GLU:HA	1:D:38:GLU:OE1	2.12	0.50
1:G:29:ILE:O	1:G:30:LYS:HB2	2.12	0.50
1:G:96:ARG:NH2	2:G:2019:HOH:O	2.45	0.50
1:H:11:ILE:HD11	1:H:48:ILE:HG22	1.93	0.50
1:H:56:VAL:CG1	1:H:61:LEU:HD11	2.42	0.50
1:E:1:MET:HE3	1:E:46:PHE:HB2	1.94	0.49
1:C:56:VAL:CG1	1:C:61:LEU:CD1	2.88	0.49
1:H:72:THR:CG2	2:H:2005:HOH:O	2.60	0.49
1:C:22:MET:HA	1:C:22:MET:CE	2.38	0.49
1:C:57:ASP:HB3	1:C:60:LYS:HB2	1.94	0.49
1:D:97:ILE:HD13	1:D:104:MET:HE2	1.95	0.49
1:E:115:VAL:O	1:E:119:ILE:HG12	2.12	0.49
1:H:1:MET:HE2	1:H:46:PHE:CG	2.46	0.49
1:C:1:MET:HE2	1:C:46:PHE:HB2	1.94	0.49
1:C:22:MET:CB	1:C:37:THR:HG22	2.43	0.49
1:D:66:SER:OG	1:D:108:ASN:ND2	2.46	0.49
1:A:89:PRO:O	1:A:90:ASN:HB2	2.13	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:56:VAL:CG1	1:C:61:LEU:HD12	2.43	0.49
1:B:56:VAL:HG11	1:B:61:LEU:HD12	1.86	0.48
1:H:34:PRO:HA	1:H:37:THR:HG23	1.96	0.48
1:F:1:MET:CE	1:F:46:PHE:HB2	2.43	0.48
1:H:18:SER:HB2	1:H:52:TYR:HD2	1.79	0.48
1:F:107:ILE:HD11	2:F:2013:HOH:O	2.12	0.48
1:C:22:MET:HE2	1:C:22:MET:CA	2.36	0.48
1:A:22:MET:HE2	1:A:22:MET:HA	1.94	0.47
1:D:118:PHE:CE1	1:D:122:THR:HG21	2.48	0.47
1:F:11:ILE:HD11	1:F:48:ILE:HG22	1.95	0.47
1:C:33:PRO:CD	1:C:34:PRO:HD2	2.43	0.47
1:C:66:SER:HB3	1:C:133:ILE:HD12	1.97	0.47
1:F:38:GLU:HA	1:F:38:GLU:OE1	2.14	0.47
1:H:31:LEU:HD22	1:H:36:VAL:HG23	1.96	0.47
1:D:1:MET:CE	1:D:46:PHE:CD1	2.95	0.47
1:A:105:LEU:C	1:A:105:LEU:HD12	2.39	0.47
1:E:25:LEU:HD23	1:E:36:VAL:CG1	2.45	0.46
1:E:22:MET:CB	1:E:37:THR:HG22	2.46	0.46
1:E:32:SER:HB2	1:E:34:PRO:HD2	1.97	0.46
1:C:18:SER:HB2	1:C:52:TYR:HD2	1.80	0.46
1:B:96:ARG:HD3	1:B:103:TYR:CZ	2.50	0.46
1:H:56:VAL:HG13	1:H:61:LEU:HD11	1.98	0.45
1:A:83:SER:O	1:A:87:THR:HG23	2.16	0.45
1:E:17:ASP:OD1	1:E:19:ARG:HB2	2.16	0.45
1:D:21:SER:N	1:D:24:GLU:OE2	2.49	0.45
1:C:75:ASN:ND2	1:C:80:ARG:HH22	2.14	0.45
1:G:96:ARG:CZ	2:G:2019:HOH:O	2.61	0.45
1:E:68:ILE:HG21	1:F:104:MET:HE3	1.99	0.45
1:C:75:ASN:ND2	1:C:80:ARG:NH2	2.52	0.45
1:C:118:PHE:CZ	1:C:122:THR:HG21	2.52	0.45
1:D:72:THR:HG23	2:D:2002:HOH:O	2.14	0.45
1:C:1:MET:HE1	1:C:48:ILE:HD13	1.99	0.45
1:C:21:SER:OG	1:C:24:GLU:HG3	2.17	0.45
1:H:97:ILE:HD13	1:H:104:MET:HE2	1.98	0.45
1:E:21:SER:HG	1:E:24:GLU:HG3	1.81	0.44
1:G:22:MET:CB	1:G:37:THR:HG22	2.47	0.44
1:G:84:TYR:HE2	1:G:122:THR:HB	1.79	0.44
1:B:18:SER:HB2	1:B:52:TYR:HD2	1.83	0.44
1:B:56:VAL:HG13	1:B:61:LEU:CD1	2.47	0.44
1:F:118:PHE:CE1	1:F:122:THR:HG21	2.52	0.44
1:C:1:MET:HE2	1:C:46:PHE:CG	2.53	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:22:MET:HB3	1:D:37:THR:HG22	1.99	0.44
1:F:104:MET:HE2	1:F:104:MET:HB2	1.91	0.44
1:B:33:PRO:O	1:B:37:THR:CG2	2.65	0.44
1:B:84:TYR:CE2	1:B:122:THR:HB	2.53	0.44
1:C:6:ILE:O	1:C:10:ILE:HG13	2.18	0.44
1:D:70:GLU:O	1:D:128:THR:HA	2.17	0.44
1:D:84:TYR:OH	1:D:122:THR:HG22	2.18	0.44
1:H:31:LEU:HD23	1:H:32:SER:N	2.33	0.43
1:H:56:VAL:HG13	1:H:61:LEU:CD1	2.48	0.43
1:B:39:ARG:O	1:B:42:GLN:HB2	2.19	0.43
1:F:10:ILE:HG23	1:F:25:LEU:HD21	2.00	0.43
1:B:32:SER:C	1:B:34:PRO:HD2	2.43	0.43
1:B:55:GLU:HB3	2:B:2001:HOH:O	2.18	0.43
1:D:9:ASN:O	1:D:13:GLU:HB2	2.18	0.43
1:E:54:LEU:HD13	1:F:14:LEU:HB3	2.01	0.43
1:H:1:MET:HE3	1:H:1:MET:HB3	1.81	0.43
1:H:118:PHE:CE1	1:H:122:THR:HG21	2.53	0.43
1:E:70:GLU:HG2	1:E:104:MET:SD	2.58	0.43
1:B:107:ILE:O	1:B:107:ILE:HG13	2.17	0.43
1:F:10:ILE:HD11	1:F:39:ARG:HD3	2.01	0.43
1:F:96:ARG:HD2	1:F:102:CYS:O	2.19	0.43
1:G:1:MET:HE3	1:G:1:MET:HB3	1.85	0.43
1:C:9:ASN:O	1:C:13:GLU:HG2	2.18	0.43
1:F:11:ILE:HD11	1:F:48:ILE:CG2	2.49	0.43
1:B:118:PHE:CZ	1:B:122:THR:HG21	2.53	0.43
1:F:85:ILE:HD13	1:F:85:ILE:HA	1.79	0.43
1:C:84:TYR:OH	1:C:122:THR:HG22	2.19	0.43
1:F:97:ILE:CD1	1:F:104:MET:HE2	2.47	0.43
1:B:22:MET:HB3	1:B:37:THR:HG22	2.01	0.42
1:A:98:ALA:HB2	1:B:134:PHE:CZ	2.54	0.42
1:E:74:LYS:NZ	1:E:123:SER:O	2.37	0.42
1:G:56:VAL:CG1	1:G:61:LEU:CD1	2.97	0.42
1:A:69:VAL:HB	1:A:105:LEU:CD1	2.49	0.42
1:E:95:TYR:O	1:E:103:TYR:HA	2.19	0.42
1:E:118:PHE:CZ	1:E:122:THR:HG21	2.54	0.42
1:G:118:PHE:CZ	1:G:122:THR:HG21	2.54	0.42
1:C:14:LEU:HB3	1:H:54:LEU:HD13	2.01	0.42
1:D:85:ILE:HD13	1:D:88:LEU:HD12	2.01	0.41
1:F:32:SER:O	1:F:35:SER:N	2.53	0.41
1:C:98:ALA:HB2	1:H:134:PHE:CZ	2.55	0.41
1:E:91:ILE:CD1	1:E:107:ILE:HG22	2.50	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:48:ILE:HG13	1:F:60:LYS:HB3	2.02	0.41
1:E:54:LEU:HD23	1:E:56:VAL:HG23	2.01	0.41
1:D:56:VAL:CG1	1:D:61:LEU:HD12	2.50	0.41
1:D:89:PRO:O	1:D:90:ASN:HB2	2.21	0.41
1:F:89:PRO:O	1:F:90:ASN:HB2	2.20	0.41
1:A:72:THR:CG2	2:A:2011:HOH:O	2.68	0.41
1:G:56:VAL:CG1	1:G:61:LEU:HD11	2.46	0.41
1:B:26:GLY:O	1:B:28:LYS:N	2.53	0.41
1:G:131:HIS:ND1	2:G:2033:HOH:O	2.37	0.41
1:C:118:PHE:O	1:C:122:THR:HG22	2.21	0.41
1:D:10:ILE:HD12	1:D:39:ARG:HB3	2.02	0.41
1:B:96:ARG:HD2	1:B:102:CYS:O	2.21	0.41
1:C:17:ASP:OD1	1:C:17:ASP:C	2.63	0.41
1:F:22:MET:CA	1:F:22:MET:CE	2.96	0.41
1:E:123:SER:N	1:E:124:PRO:CD	2.83	0.40
1:A:123:SER:HB3	1:C:76:ALA:HB1	2.03	0.40
1:B:32:SER:OG	1:B:35:SER:HB3	2.21	0.40
1:D:68:ILE:HG21	1:G:104:MET:HE3	2.02	0.40
1:H:70:GLU:HG2	1:H:104:MET:SD	2.61	0.40
1:B:72:THR:HG23	2:B:2007:HOH:O	2.19	0.40

All (2) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:2014:HOH:O	2:A:2014:HOH:O[3_655]	2.09	0.11
2:G:2014:HOH:O	2:G:2032:HOH:O[3_655]	2.19	0.01

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	138/144 (96%)	132 (96%)	5 (4%)	1 (1%)	18	28
1	B	138/144 (96%)	128 (93%)	8 (6%)	2 (1%)	9	13
1	C	138/144 (96%)	135 (98%)	3 (2%)	0	100	100
1	D	138/144 (96%)	131 (95%)	6 (4%)	1 (1%)	18	28
1	E	138/144 (96%)	134 (97%)	4 (3%)	0	100	100
1	F	138/144 (96%)	124 (90%)	12 (9%)	2 (1%)	9	13
1	G	138/144 (96%)	134 (97%)	3 (2%)	1 (1%)	18	28
1	H	138/144 (96%)	129 (94%)	8 (6%)	1 (1%)	18	28
All	All	1104/1152 (96%)	1047 (95%)	49 (4%)	8 (1%)	18	28

All (8) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	D	33	PRO
1	B	27	ARG
1	G	30	LYS
1	H	8	LEU
1	F	30	LYS
1	A	30	LYS
1	F	33	PRO
1	B	34	PRO

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	123/130 (95%)	107 (87%)	16 (13%)	4	5
1	B	117/130 (90%)	108 (92%)	9 (8%)	12	20
1	C	122/130 (94%)	110 (90%)	12 (10%)	7	12
1	D	118/130 (91%)	98 (83%)	20 (17%)	2	3
1	E	123/130 (95%)	116 (94%)	7 (6%)	18	33
1	F	117/130 (90%)	99 (85%)	18 (15%)	2	3

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	G	121/130 (93%)	110 (91%)	11 (9%)	9 14
1	H	117/130 (90%)	105 (90%)	12 (10%)	7 11
All	All	958/1040 (92%)	853 (89%)	105 (11%)	6 9

All (105) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	12	GLU
1	A	23	ARG
1	A	29	ILE
1	A	32	SER
1	A	37	THR
1	A	54	LEU
1	A	56	VAL
1	A	66	SER
1	A	72	THR
1	A	73	VAL
1	A	85	ILE
1	A	105	LEU
1	A	107	ILE
1	A	110	GLU
1	A	122	THR
1	A	136	GLU
1	B	31	LEU
1	B	36	VAL
1	B	37	THR
1	B	42	GLN
1	B	56	VAL
1	B	72	THR
1	B	73	VAL
1	B	85	ILE
1	B	122	THR
1	C	3	LEU
1	C	36	VAL
1	C	37	THR
1	C	42	GLN
1	C	50	LYS
1	C	51	GLN
1	C	66	SER
1	C	72	THR
1	C	73	VAL

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	C	80	ARG
1	C	107	ILE
1	C	122	THR
1	D	1	MET
1	D	9	ASN
1	D	10	ILE
1	D	24	GLU
1	D	32	SER
1	D	33	PRO
1	D	35	SER
1	D	36	VAL
1	D	37	THR
1	D	48	ILE
1	D	53	THR
1	D	54	LEU
1	D	55	GLU
1	D	56	VAL
1	D	72	THR
1	D	73	VAL
1	D	85	ILE
1	D	107	ILE
1	D	110	GLU
1	D	122	THR
1	E	3	LEU
1	E	6	ILE
1	E	32	SER
1	E	66	SER
1	E	72	THR
1	E	105	LEU
1	E	122	THR
1	F	1	MET
1	F	11	ILE
1	F	12	GLU
1	F	18	SER
1	F	22	MET
1	F	36	VAL
1	F	37	THR
1	F	39	ARG
1	F	50	LYS
1	F	55	GLU
1	F	56	VAL
1	F	70	GLU

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	F	72	THR
1	F	107	ILE
1	F	110	GLU
1	F	122	THR
1	F	123	SER
1	F	127	GLN
1	G	1	MET
1	G	44	GLU
1	G	45	SER
1	G	50	LYS
1	G	56	VAL
1	G	66	SER
1	G	85	ILE
1	G	107	ILE
1	G	110	GLU
1	G	117	ASP
1	G	122	THR
1	H	1	MET
1	H	13	GLU
1	H	20	LEU
1	H	24	GLU
1	H	36	VAL
1	H	37	THR
1	H	48	ILE
1	H	56	VAL
1	H	72	THR
1	H	110	GLU
1	H	122	THR
1	H	123	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (19) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	75	ASN
1	A	90	ASN
1	A	108	ASN
1	B	42	GLN
1	B	75	ASN
1	B	86	GLN
1	B	108	ASN
1	C	5	GLN
1	C	9	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	C	75	ASN
1	D	86	GLN
1	D	108	ASN
1	E	86	GLN
1	E	127	GLN
1	F	108	ASN
1	G	90	ASN
1	H	75	ASN
1	H	86	GLN
1	H	108	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 oligosaccharides 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	140/144 (97%)	-0.34	1 (0%) 84 81	21, 32, 55, 62	0
1	B	140/144 (97%)	0.28	21 (15%) 5 4	21, 35, 102, 106	0
1	C	140/144 (97%)	-0.28	0 100 100	22, 37, 54, 65	0
1	D	140/144 (97%)	0.43	25 (17%) 3 3	21, 37, 108, 111	0
1	E	140/144 (97%)	-0.26	1 (0%) 84 81	24, 38, 55, 70	0
1	F	140/144 (97%)	0.37	22 (15%) 5 4	21, 37, 106, 108	0
1	G	140/144 (97%)	-0.23	2 (1%) 73 69	22, 36, 57, 71	0
1	H	140/144 (97%)	0.31	21 (15%) 5 4	20, 37, 100, 105	0
All	All	1120/1152 (97%)	0.04	93 (8%) 17 14	20, 37, 98, 111	0

All (93) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	F	23	ARG	4.8
1	D	8	LEU	4.7
1	H	6	ILE	4.3
1	D	140	LYS	4.2
1	G	2	LYS	4.1
1	H	29	ILE	4.0
1	F	30	LYS	4.0
1	D	6	ILE	3.9
1	H	27	ARG	3.9
1	D	27	ARG	3.7
1	B	6	ILE	3.6
1	F	46	PHE	3.6
1	D	42	GLN	3.6
1	H	1	MET	3.5
1	F	27	ARG	3.5
1	D	1	MET	3.5

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	B	1	MET	3.4
1	D	31	LEU	3.3
1	D	23	ARG	3.2
1	F	6	ILE	3.2
1	H	33	PRO	3.2
1	D	36	VAL	3.2
1	F	33	PRO	3.2
1	H	23	ARG	3.0
1	B	31	LEU	3.0
1	B	30	LYS	2.9
1	D	35	SER	2.9
1	B	28	LYS	2.9
1	E	2	LYS	2.9
1	D	25	LEU	2.9
1	D	34	PRO	2.9
1	B	25	LEU	2.9
1	F	28	LYS	2.8
1	F	29	ILE	2.8
1	D	33	PRO	2.8
1	H	30	LYS	2.8
1	F	35	SER	2.8
1	D	3	LEU	2.8
1	H	12	GLU	2.8
1	B	27	ARG	2.8
1	H	140	LYS	2.8
1	F	140	LYS	2.7
1	D	30	LYS	2.7
1	D	29	ILE	2.7
1	F	36	VAL	2.7
1	H	3	LEU	2.6
1	H	31	LEU	2.6
1	B	23	ARG	2.6
1	B	46	PHE	2.6
1	D	41	ARG	2.5
1	F	26	GLY	2.5
1	A	2	LYS	2.5
1	B	12	GLU	2.5
1	H	34	PRO	2.5
1	H	8	LEU	2.5
1	H	28	LYS	2.5
1	F	42	GLN	2.5
1	B	11	ILE	2.4

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	B	138	ASP	2.4
1	H	42	GLN	2.4
1	B	32	SER	2.4
1	H	35	SER	2.4
1	B	36	VAL	2.4
1	D	37	THR	2.4
1	B	2	LYS	2.4
1	B	34	PRO	2.3
1	H	21	SER	2.3
1	F	37	THR	2.3
1	F	20	LEU	2.3
1	H	25	LEU	2.3
1	B	29	ILE	2.3
1	F	1	MET	2.3
1	F	25	LEU	2.2
1	F	8	LEU	2.2
1	F	31	LEU	2.2
1	D	28	LYS	2.2
1	B	3	LEU	2.2
1	B	8	LEU	2.2
1	D	2	LYS	2.2
1	H	46	PHE	2.2
1	D	22	MET	2.1
1	D	21	SER	2.1
1	H	36	VAL	2.1
1	F	55	GLU	2.1
1	D	46	PHE	2.1
1	B	7	ASP	2.1
1	F	22	MET	2.1
1	F	41	ARG	2.0
1	B	37	THR	2.0
1	G	1	MET	2.0
1	H	32	SER	2.0
1	D	32	SER	2.0
1	D	45	SER	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 oligosaccharides 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.