wwPDB X-ray Structure Validation Summary Report (i)

May 29, 2020 – 03:25 am BST

PDB ID	:	3MQ7
Title	:	Crystal Structure of Ectodomain Mutant of BST-2/Tetherin/CD317
Authors	:	Xiong, Y.; Yang, H.; Wang, J.; Meng, W.
Deposited on	:	2010-04-27
Resolution	:	2.28 Å(reported)

This is a wwPDB X-ray Structure Validation Summary 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 (i) symbol.

The following versions of software and data (see references (i)) were used in the production of this report:

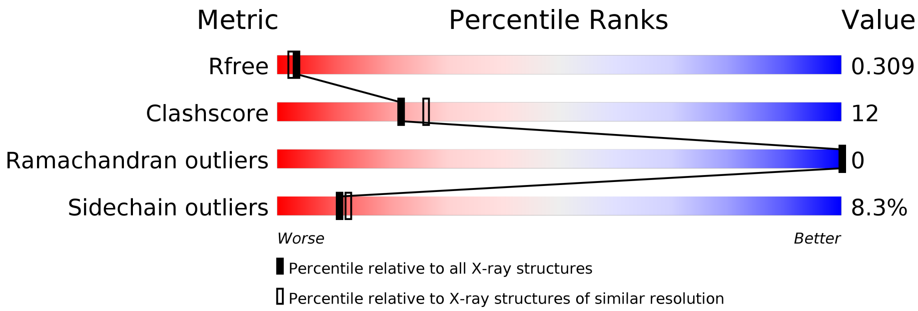
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.11
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.11

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 2.28 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	6980 (2.30-2.26)
Clashscore	141614	7711 (2.30-2.26)
Ramachandran outliers	138981	7597 (2.30-2.26)
Sidechain outliers	138945	7598 (2.30-2.26)

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 on 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%

Mol	Chain	Length	Quality of chain
1	A	121	67% 14% • 18%
1	B	121	60% 20% • 18%
1	C	121	66% 13% • 18%
1	D	121	65% 16% • 18%
1	E	121	65% 14% • 18%
1	F	121	62% 15% • • 18%
1	G	121	67% 12% • 18%

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Mol	Chain	Length	Quality of chain
1	H	121	62% 16% • 18%
1	I	121	60% 17% • • 18%
1	J	121	67% 12% • • 18%
1	K	121	65% 14% • 18%
1	L	121	65% 15% • 18%

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 9314 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 Bone marrow stromal antigen 2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	99	Total 765	C 463	N 144	O 155	Se 3	0	0	0
1	B	99	Total 765	C 463	N 144	O 155	Se 3	0	0	0
1	C	99	Total 765	C 463	N 144	O 155	Se 3	0	0	0
1	D	99	Total 765	C 463	N 144	O 155	Se 3	0	0	0
1	E	99	Total 765	C 463	N 144	O 155	Se 3	0	0	0
1	F	99	Total 765	C 463	N 144	O 155	Se 3	0	0	0
1	G	99	Total 765	C 463	N 144	O 155	Se 3	0	0	0
1	H	99	Total 765	C 463	N 144	O 155	Se 3	0	0	0
1	I	99	Total 765	C 463	N 144	O 155	Se 3	0	0	0
1	J	99	Total 765	C 463	N 144	O 155	Se 3	0	0	0
1	K	99	Total 765	C 463	N 144	O 155	Se 3	0	0	0
1	L	99	Total 765	C 463	N 144	O 155	Se 3	0	0	0

There are 108 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	41	ALA	-	EXPRESSION TAG	UNP Q10589
A	42	GLY	-	EXPRESSION TAG	UNP Q10589
A	43	PHE	-	EXPRESSION TAG	UNP Q10589
A	44	SER	-	EXPRESSION TAG	UNP Q10589
A	45	MSE	-	EXPRESSION TAG	UNP Q10589

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Chain	Residue	Modelled	Actual	Comment	Reference
A	46	ASP	-	EXPRESSION TAG	UNP Q10589
A	53	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
A	63	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
A	91	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
B	41	ALA	-	EXPRESSION TAG	UNP Q10589
B	42	GLY	-	EXPRESSION TAG	UNP Q10589
B	43	PHE	-	EXPRESSION TAG	UNP Q10589
B	44	SER	-	EXPRESSION TAG	UNP Q10589
B	45	MSE	-	EXPRESSION TAG	UNP Q10589
B	46	ASP	-	EXPRESSION TAG	UNP Q10589
B	53	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
B	63	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
B	91	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
C	41	ALA	-	EXPRESSION TAG	UNP Q10589
C	42	GLY	-	EXPRESSION TAG	UNP Q10589
C	43	PHE	-	EXPRESSION TAG	UNP Q10589
C	44	SER	-	EXPRESSION TAG	UNP Q10589
C	45	MSE	-	EXPRESSION TAG	UNP Q10589
C	46	ASP	-	EXPRESSION TAG	UNP Q10589
C	53	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
C	63	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
C	91	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
D	41	ALA	-	EXPRESSION TAG	UNP Q10589
D	42	GLY	-	EXPRESSION TAG	UNP Q10589
D	43	PHE	-	EXPRESSION TAG	UNP Q10589
D	44	SER	-	EXPRESSION TAG	UNP Q10589
D	45	MSE	-	EXPRESSION TAG	UNP Q10589
D	46	ASP	-	EXPRESSION TAG	UNP Q10589
D	53	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
D	63	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
D	91	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
E	41	ALA	-	EXPRESSION TAG	UNP Q10589
E	42	GLY	-	EXPRESSION TAG	UNP Q10589
E	43	PHE	-	EXPRESSION TAG	UNP Q10589
E	44	SER	-	EXPRESSION TAG	UNP Q10589
E	45	MSE	-	EXPRESSION TAG	UNP Q10589
E	46	ASP	-	EXPRESSION TAG	UNP Q10589
E	53	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
E	63	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
E	91	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
F	41	ALA	-	EXPRESSION TAG	UNP Q10589
F	42	GLY	-	EXPRESSION TAG	UNP Q10589

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Chain	Residue	Modelled	Actual	Comment	Reference
F	43	PHE	-	EXPRESSION TAG	UNP Q10589
F	44	SER	-	EXPRESSION TAG	UNP Q10589
F	45	MSE	-	EXPRESSION TAG	UNP Q10589
F	46	ASP	-	EXPRESSION TAG	UNP Q10589
F	53	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
F	63	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
F	91	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
G	41	ALA	-	EXPRESSION TAG	UNP Q10589
G	42	GLY	-	EXPRESSION TAG	UNP Q10589
G	43	PHE	-	EXPRESSION TAG	UNP Q10589
G	44	SER	-	EXPRESSION TAG	UNP Q10589
G	45	MSE	-	EXPRESSION TAG	UNP Q10589
G	46	ASP	-	EXPRESSION TAG	UNP Q10589
G	53	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
G	63	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
G	91	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
H	41	ALA	-	EXPRESSION TAG	UNP Q10589
H	42	GLY	-	EXPRESSION TAG	UNP Q10589
H	43	PHE	-	EXPRESSION TAG	UNP Q10589
H	44	SER	-	EXPRESSION TAG	UNP Q10589
H	45	MSE	-	EXPRESSION TAG	UNP Q10589
H	46	ASP	-	EXPRESSION TAG	UNP Q10589
H	53	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
H	63	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
H	91	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
I	41	ALA	-	EXPRESSION TAG	UNP Q10589
I	42	GLY	-	EXPRESSION TAG	UNP Q10589
I	43	PHE	-	EXPRESSION TAG	UNP Q10589
I	44	SER	-	EXPRESSION TAG	UNP Q10589
I	45	MSE	-	EXPRESSION TAG	UNP Q10589
I	46	ASP	-	EXPRESSION TAG	UNP Q10589
I	53	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
I	63	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
I	91	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
J	41	ALA	-	EXPRESSION TAG	UNP Q10589
J	42	GLY	-	EXPRESSION TAG	UNP Q10589
J	43	PHE	-	EXPRESSION TAG	UNP Q10589
J	44	SER	-	EXPRESSION TAG	UNP Q10589
J	45	MSE	-	EXPRESSION TAG	UNP Q10589
J	46	ASP	-	EXPRESSION TAG	UNP Q10589
J	53	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
J	63	ALA	CYS	ENGINEERED MUTATION	UNP Q10589

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Chain	Residue	Modelled	Actual	Comment	Reference
J	91	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
K	41	ALA	-	EXPRESSION TAG	UNP Q10589
K	42	GLY	-	EXPRESSION TAG	UNP Q10589
K	43	PHE	-	EXPRESSION TAG	UNP Q10589
K	44	SER	-	EXPRESSION TAG	UNP Q10589
K	45	MSE	-	EXPRESSION TAG	UNP Q10589
K	46	ASP	-	EXPRESSION TAG	UNP Q10589
K	53	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
K	63	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
K	91	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
L	41	ALA	-	EXPRESSION TAG	UNP Q10589
L	42	GLY	-	EXPRESSION TAG	UNP Q10589
L	43	PHE	-	EXPRESSION TAG	UNP Q10589
L	44	SER	-	EXPRESSION TAG	UNP Q10589
L	45	MSE	-	EXPRESSION TAG	UNP Q10589
L	46	ASP	-	EXPRESSION TAG	UNP Q10589
L	53	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
L	63	ALA	CYS	ENGINEERED MUTATION	UNP Q10589
L	91	ALA	CYS	ENGINEERED MUTATION	UNP Q10589

- Molecule 2 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	K	1	Total Ca 1 1	0	0
2	E	1	Total Ca 1 1	0	0

- Molecule 3 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	7	Total O 7 7	0	0
3	B	5	Total O 5 5	0	0
3	C	8	Total O 8 8	0	0
3	D	9	Total O 9 9	0	0
3	E	21	Total O 21 21	0	0
3	F	17	Total O 17 17	0	0

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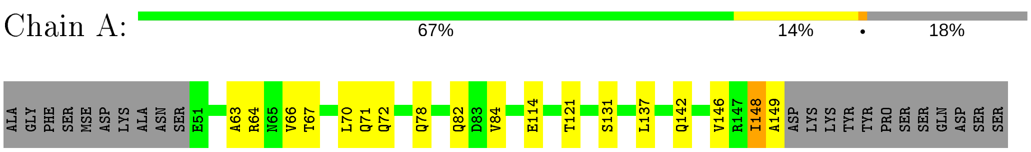
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	G	7	Total O 7 7	0	0
3	H	7	Total O 7 7	0	0
3	I	10	Total O 10 10	0	0
3	J	9	Total O 9 9	0	0
3	K	24	Total O 24 24	0	0
3	L	8	Total O 8 8	0	0

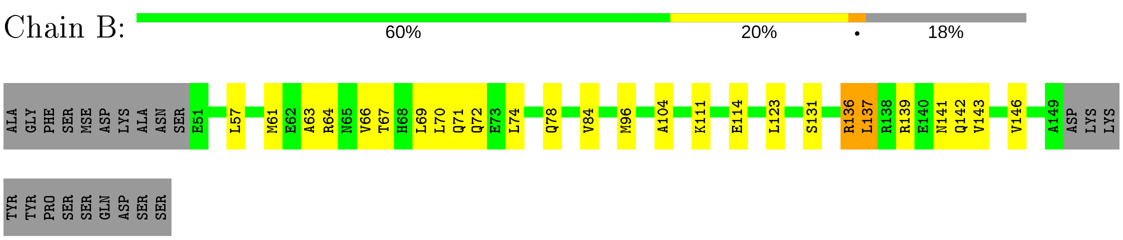
3 Residue-property plots (i)

These plots are drawn for all protein, RNA and DNA 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. 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. 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.

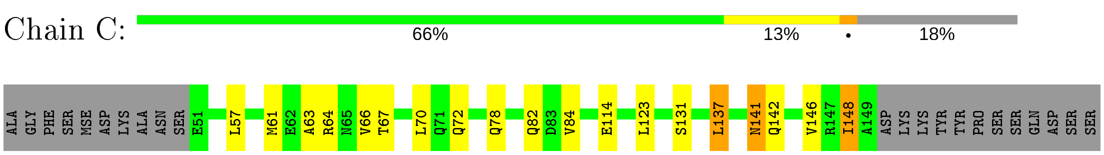
- Molecule 1: Bone marrow stromal antigen 2



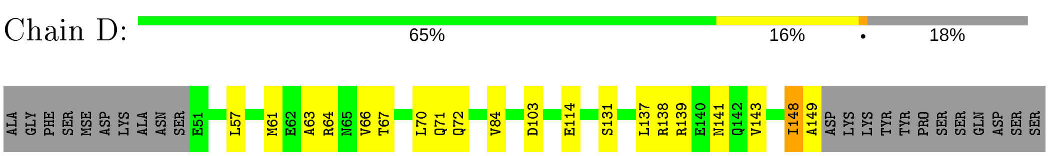
- Molecule 1: Bone marrow stromal antigen 2



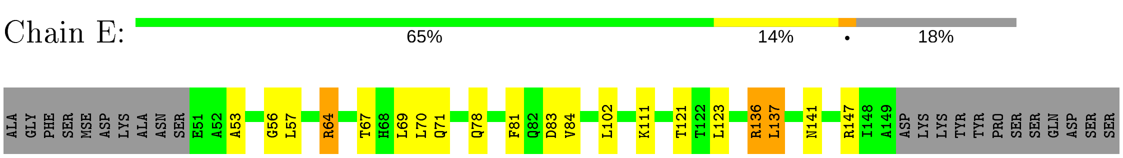
- Molecule 1: Bone marrow stromal antigen 2



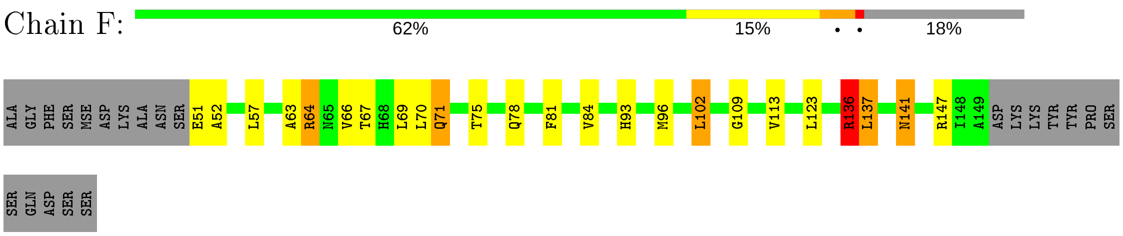
- Molecule 1: Bone marrow stromal antigen 2



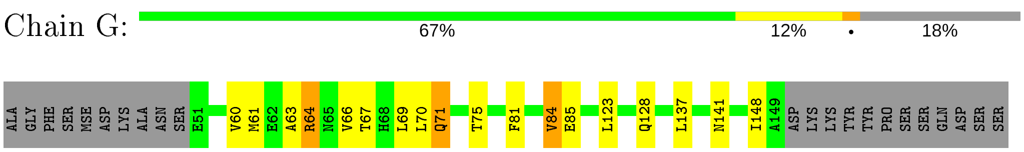
- Molecule 1: Bone marrow stromal antigen 2



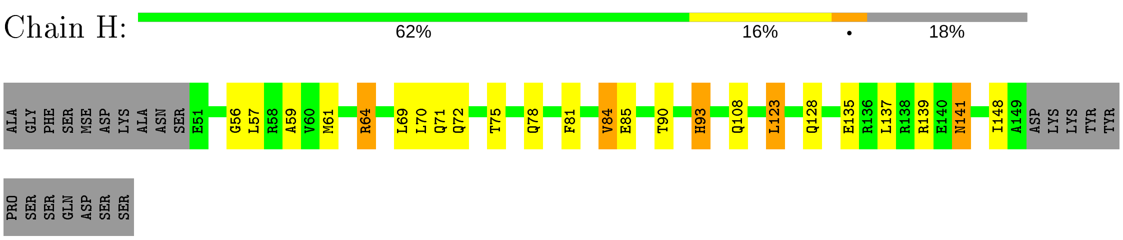
- Molecule 1: Bone marrow stromal antigen 2



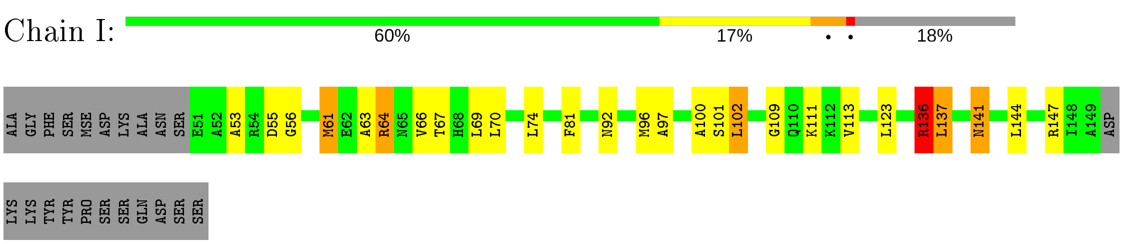
- Molecule 1: Bone marrow stromal antigen 2



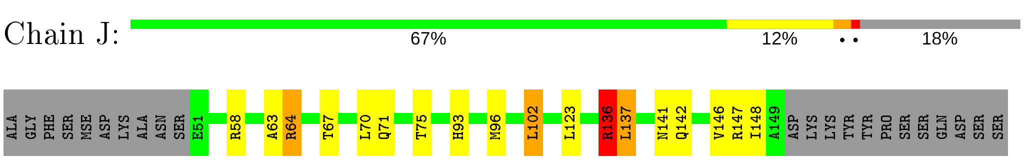
- Molecule 1: Bone marrow stromal antigen 2



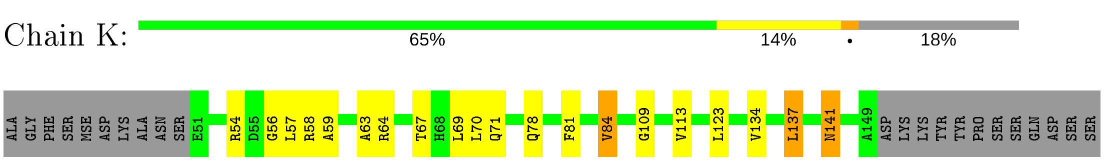
- Molecule 1: Bone marrow stromal antigen 2



- Molecule 1: Bone marrow stromal antigen 2

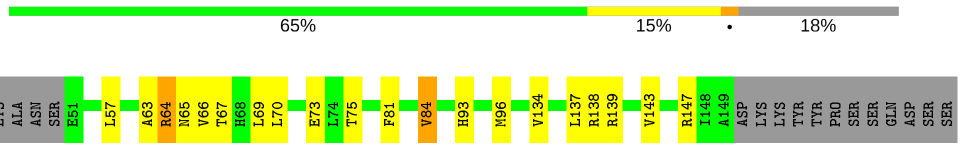


- Molecule 1: Bone marrow stromal antigen 2



- Molecule 1: Bone marrow stromal antigen 2

Chain L:


65%
15%
•
18%
ALA
GLY
PHE
SER
MSE
ASP
LYS
ALA
ASN
SER
E51
L57
A63
R64
N65
V66
T67
H68
L69
L70
E73
L74
T75
F81
V84
H93
M96
V134
L137
R138
R139
V143
R147
I148
A149
ASP
LYS
LYS
TYR
TYR
PRO
SER
SER
GLN
ASP
SER
SER

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	66.00Å 97.16Å 117.40Å 90.00° 105.86° 90.00°	Depositor
Resolution (Å)	38.68 – 2.28 38.58 – 2.29	Depositor EDS
% Data completeness (in resolution range)	96.0 (38.68-2.28) 97.6 (38.58-2.29)	Depositor EDS
R_{merge}	0.07	Depositor
R_{sym}	0.07	Depositor
$< I/\sigma(I) >$ [1]	1.17 (at 2.29Å)	Xtriage
Refinement program	REFMAC 5.5.0102	Depositor
R, R_{free}	0.236 , 0.270 0.281 , 0.309	Depositor DCC
R_{free} test set	3142 reflections (4.96%)	wwPDB-VP
Wilson B-factor (Å^2)	38.9	Xtriage
Anisotropy	0.732	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.33 , 32.3	EDS
L-test for twinning[2]	$< \|L\| >$ = 0.55, $< L^2 >$ = 0.40	Xtriage
Estimated twinning fraction	0.000 for h,-k,-h-l	Xtriage
Reported twinning fraction	0.893 for H, K, L 0.107 for -H, -K, H+L	Depositor
Outliers	3 of 63326 reflections (0.005%)	Xtriage
F_o,F_c correlation	0.92	EDS
Total number of atoms	9314	wwPDB-VP
Average B, all atoms (Å^2)	26.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 20.16 % 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 9.2414e-03. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

[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 (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: CA

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	0.62	0/765	0.67	0/1023
1	B	0.61	0/765	0.69	2/1023 (0.2%)
1	C	0.61	0/765	0.68	0/1023
1	D	0.60	0/765	0.67	0/1023
1	E	0.77	0/765	0.86	1/1023 (0.1%)
1	F	0.67	0/765	0.82	2/1023 (0.2%)
1	G	0.79	1/765 (0.1%)	0.78	0/1023
1	H	0.65	0/765	0.69	0/1023
1	I	0.71	0/765	0.83	3/1023 (0.3%)
1	J	0.60	0/765	0.76	2/1023 (0.2%)
1	K	0.75	0/765	0.78	0/1023
1	L	0.70	0/765	0.72	0/1023
All	All	0.68	1/9180 (0.0%)	0.75	10/12276 (0.1%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	G	60	VAL	CB-CG2	-6.54	1.39	1.52

The worst 5 of 10 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	J	58	ARG	NE-CZ-NH2	6.70	123.65	120.30
1	F	102	LEU	CA-CB-CG	6.54	130.34	115.30
1	B	136	ARG	NE-CZ-NH1	-6.20	117.20	120.30
1	B	136	ARG	NE-CZ-NH2	6.19	123.39	120.30
1	I	136	ARG	NE-CZ-NH2	-5.55	117.53	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	765	0	766	25	0
1	B	765	0	766	31	0
1	C	765	0	766	27	0
1	D	765	0	766	25	0
1	E	765	0	766	32	0
1	F	765	0	766	35	0
1	G	765	0	766	35	0
1	H	765	0	766	43	0
1	I	765	0	766	32	0
1	J	765	0	766	14	0
1	K	765	0	766	26	0
1	L	765	0	766	25	0
2	E	1	0	0	0	0
2	K	1	0	0	0	0
3	A	7	0	0	0	0
3	B	5	0	0	0	0
3	C	8	0	0	0	0
3	D	9	0	0	0	0
3	E	21	0	0	1	0
3	F	17	0	0	2	0
3	G	7	0	0	8	0
3	H	7	0	0	2	0
3	I	10	0	0	2	0
3	J	9	0	0	1	0
3	K	24	0	0	6	0
3	L	8	0	0	0	0
All	All	9314	0	9192	216	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 12.

The worst 5 of 216 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:84:VAL:CG1	1:B:84:VAL:HG11	1.73	1.19

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:70:LEU:HD21	1:D:70:LEU:HD21	1.28	1.15
1:K:70:LEU:HD21	1:L:70:LEU:HD21	1.21	1.14
1:A:84:VAL:HG11	1:B:84:VAL:CG1	1.78	1.12
1:G:84:VAL:HG11	1:H:84:VAL:HG11	1.31	1.11

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	97/121 (80%)	97 (100%)	0	0	100	100
1	B	97/121 (80%)	96 (99%)	1 (1%)	0	100	100
1	C	97/121 (80%)	97 (100%)	0	0	100	100
1	D	97/121 (80%)	97 (100%)	0	0	100	100
1	E	97/121 (80%)	97 (100%)	0	0	100	100
1	F	97/121 (80%)	96 (99%)	1 (1%)	0	100	100
1	G	97/121 (80%)	95 (98%)	2 (2%)	0	100	100
1	H	97/121 (80%)	95 (98%)	2 (2%)	0	100	100
1	I	97/121 (80%)	97 (100%)	0	0	100	100
1	J	97/121 (80%)	96 (99%)	1 (1%)	0	100	100
1	K	97/121 (80%)	96 (99%)	1 (1%)	0	100	100
1	L	97/121 (80%)	96 (99%)	1 (1%)	0	100	100
All	All	1164/1452 (80%)	1155 (99%)	9 (1%)	0	100	100

There are no Ramachandran outliers to report.

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	79/94 (84%)	73 (92%)	6 (8%)	13	15
1	B	79/94 (84%)	73 (92%)	6 (8%)	13	15
1	C	79/94 (84%)	72 (91%)	7 (9%)	9	10
1	D	79/94 (84%)	74 (94%)	5 (6%)	18	22
1	E	79/94 (84%)	72 (91%)	7 (9%)	9	10
1	F	79/94 (84%)	70 (89%)	9 (11%)	5	5
1	G	79/94 (84%)	72 (91%)	7 (9%)	9	10
1	H	79/94 (84%)	72 (91%)	7 (9%)	9	10
1	I	79/94 (84%)	70 (89%)	9 (11%)	5	5
1	J	79/94 (84%)	72 (91%)	7 (9%)	9	10
1	K	79/94 (84%)	74 (94%)	5 (6%)	18	22
1	L	79/94 (84%)	75 (95%)	4 (5%)	24	31
All	All	948/1128 (84%)	869 (92%)	79 (8%)	11	12

5 of 79 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	F	123	LEU
1	G	123	LEU
1	K	137	LEU
1	F	136	ARG
1	G	64	ARG

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 40 such sidechains are listed below:

Mol	Chain	Res	Type
1	F	110	GLN
1	G	92	ASN
1	K	72	GLN
1	F	141	ASN

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Mol	Chain	Res	Type
1	H	71	GLN

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 carbohydrates in this entry.

5.6 Ligand geometry (i)

Of 2 ligands modelled in this entry, 2 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

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 (i)

6.1 Protein, DNA and RNA chains (i)

Unable to reproduce the depositors R factor - this section is therefore empty.

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

Unable to reproduce the depositors R factor - this section is therefore empty.

6.3 Carbohydrates (i)

Unable to reproduce the depositors R factor - this section is therefore empty.

6.4 Ligands (i)

Unable to reproduce the depositors R factor - this section is therefore empty.

6.5 Other polymers (i)

Unable to reproduce the depositors R factor - this section is therefore empty.