wwPDB X-ray Structure Validation Summary Report (i)

Mar 9, 2026 – 02:10 PM EDT

PDB ID	:	9EE4 / pdb_00009ee4
Title	:	HIV CA - FG peptide (34 mM)
Authors	:	Melcak, I.; Sarafianos, S.G.
Deposited on	:	2024-11-18
Resolution	:	3.10 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 types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

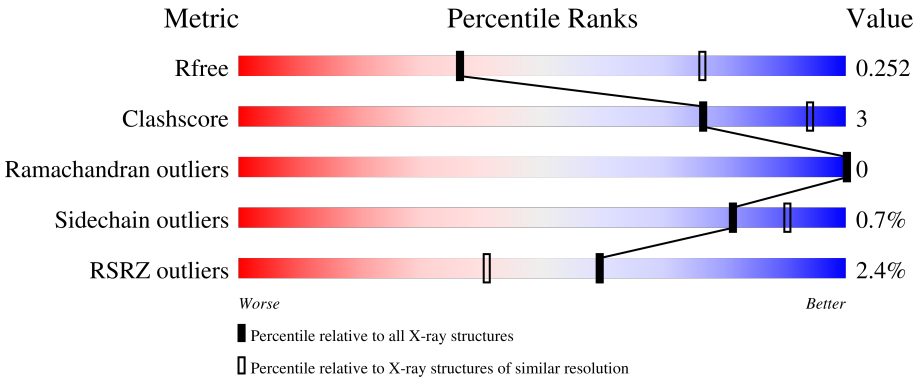
MolProbity	:	4-5-2 with Phenix2.0
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.48.1

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 3.10 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}	164625	1351 (3.10-3.10)
Clashscore	180529	1454 (3.10-3.10)
Ramachandran outliers	177936	1391 (3.10-3.10)
Sidechain outliers	177891	1391 (3.10-3.10)
RSRZ outliers	164620	1351 (3.10-3.10)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	231	3% 87% 7% 6%
1	B	231	84% 5% 10%
1	C	231	2% 86% 6% 8%
1	D	231	3% 79% 8% • 13%
1	E	231	3% 80% 12% • 8%

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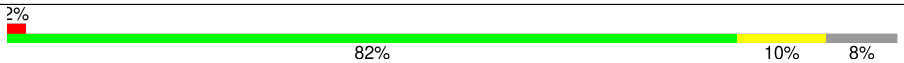
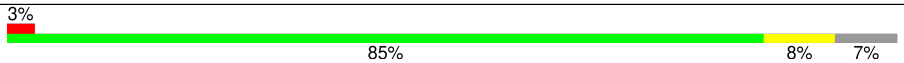
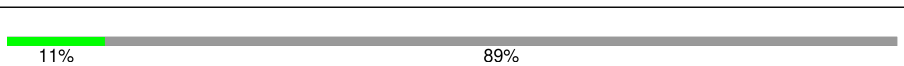
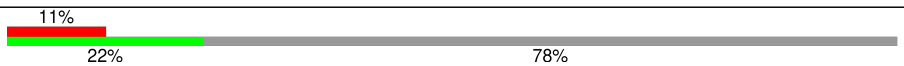
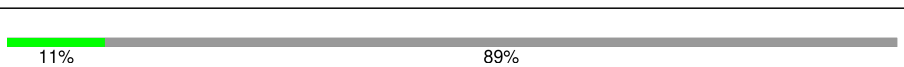
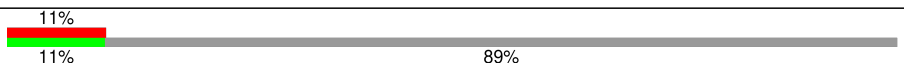
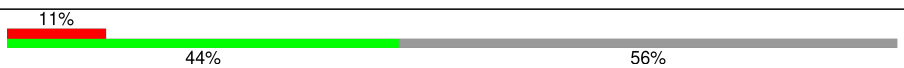
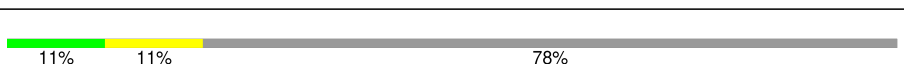
Mol	Chain	Length	Quality of chain
1	F	231	
1	G	231	
1	H	231	
1	I	231	
1	J	231	
1	K	231	
1	L	231	
2	M	9	
2	O	9	
2	P	9	
2	Q	9	
2	R	9	
2	S	9	
2	U	9	
2	V	9	
2	W	9	
2	X	9	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	CL	B	301	-	-	X	-

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 19347 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 Capsid protein p24.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	218	Total	C	N	O	S	0	0	0
			1628	1026	284	304	14			
1	B	207	Total	C	N	O	S	0	0	0
			1586	998	275	299	14			
1	C	212	Total	C	N	O	S	0	0	0
			1622	1018	284	306	14			
1	D	202	Total	C	N	O	S	0	0	0
			1534	962	268	290	14			
1	E	213	Total	C	N	O	S	0	0	0
			1612	1015	282	301	14			
1	F	219	Total	C	N	O	S	0	0	0
			1661	1044	292	311	14			
1	G	218	Total	C	N	O	S	0	0	0
			1663	1043	293	313	14			
1	H	210	Total	C	N	O	S	0	0	0
			1593	1003	279	297	14			
1	I	212	Total	C	N	O	S	0	0	0
			1595	1010	274	297	14			
1	J	214	Total	C	N	O	S	0	0	0
			1634	1025	287	308	14			
1	K	201	Total	C	N	O	S	0	0	0
			1525	960	265	286	14			
1	L	205	Total	C	N	O	S	0	0	0
			1540	971	265	291	13			

There are 48 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	14	CYS	ALA	engineered mutation	UNP P12493
A	45	CYS	GLU	engineered mutation	UNP P12493
A	184	ALA	TRP	engineered mutation	UNP P12493
A	185	ALA	MET	engineered mutation	UNP P12493
B	14	CYS	ALA	engineered mutation	UNP P12493

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Chain	Residue	Modelled	Actual	Comment	Reference
B	45	CYS	GLU	engineered mutation	UNP P12493
B	184	ALA	TRP	engineered mutation	UNP P12493
B	185	ALA	MET	engineered mutation	UNP P12493
C	14	CYS	ALA	engineered mutation	UNP P12493
C	45	CYS	GLU	engineered mutation	UNP P12493
C	184	ALA	TRP	engineered mutation	UNP P12493
C	185	ALA	MET	engineered mutation	UNP P12493
D	14	CYS	ALA	engineered mutation	UNP P12493
D	45	CYS	GLU	engineered mutation	UNP P12493
D	184	ALA	TRP	engineered mutation	UNP P12493
D	185	ALA	MET	engineered mutation	UNP P12493
E	14	CYS	ALA	engineered mutation	UNP P12493
E	45	CYS	GLU	engineered mutation	UNP P12493
E	184	ALA	TRP	engineered mutation	UNP P12493
E	185	ALA	MET	engineered mutation	UNP P12493
F	14	CYS	ALA	engineered mutation	UNP P12493
F	45	CYS	GLU	engineered mutation	UNP P12493
F	184	ALA	TRP	engineered mutation	UNP P12493
F	185	ALA	MET	engineered mutation	UNP P12493
G	14	CYS	ALA	engineered mutation	UNP P12493
G	45	CYS	GLU	engineered mutation	UNP P12493
G	184	ALA	TRP	engineered mutation	UNP P12493
G	185	ALA	MET	engineered mutation	UNP P12493
H	14	CYS	ALA	engineered mutation	UNP P12493
H	45	CYS	GLU	engineered mutation	UNP P12493
H	184	ALA	TRP	engineered mutation	UNP P12493
H	185	ALA	MET	engineered mutation	UNP P12493
I	14	CYS	ALA	engineered mutation	UNP P12493
I	45	CYS	GLU	engineered mutation	UNP P12493
I	184	ALA	TRP	engineered mutation	UNP P12493
I	185	ALA	MET	engineered mutation	UNP P12493
J	14	CYS	ALA	engineered mutation	UNP P12493
J	45	CYS	GLU	engineered mutation	UNP P12493
J	184	ALA	TRP	engineered mutation	UNP P12493
J	185	ALA	MET	engineered mutation	UNP P12493
K	14	CYS	ALA	engineered mutation	UNP P12493
K	45	CYS	GLU	engineered mutation	UNP P12493
K	184	ALA	TRP	engineered mutation	UNP P12493
K	185	ALA	MET	engineered mutation	UNP P12493
L	14	CYS	ALA	engineered mutation	UNP P12493
L	45	CYS	GLU	engineered mutation	UNP P12493
L	184	ALA	TRP	engineered mutation	UNP P12493

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Chain	Residue	Modelled	Actual	Comment	Reference
L	185	ALA	MET	engineered mutation	UNP P12493

- Molecule 2 is a protein called FG peptide.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf	Trace
2	O	4	Total C N O 25 17 4 4	0	0	0
2	P	2	Total C N O 16 12 2 2	0	0	0
2	S	2	Total C N O 16 12 2 2	0	0	0
2	W	4	Total C N O 25 17 4 4	0	0	0
2	X	2	Total C N O 15 11 2 2	0	0	0
2	M	1	Total C N O 11 9 1 1	0	0	0
2	Q	1	Total C N O 11 9 1 1	0	0	0
2	R	1	Total C N O 11 9 1 1	0	0	0
2	U	1	Total C N O 11 9 1 1	0	0	0
2	V	1	Total C N O 11 9 1 1	0	0	0

- Molecule 3 is CHLORIDE ION (CCD ID: CL) (formula: Cl).

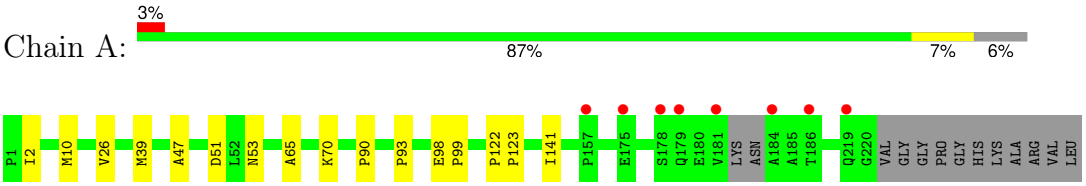
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	B	1	Total Cl 1 1	0	0
3	G	1	Total Cl 1 1	0	0

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.

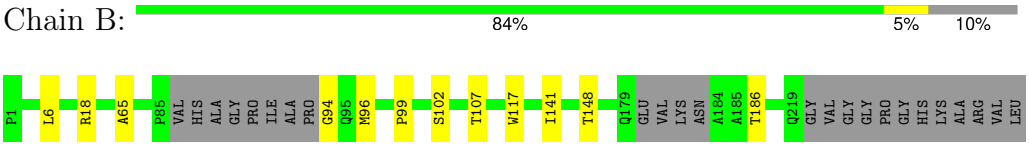
• Molecule 1: Capsid protein p24

Chain A:



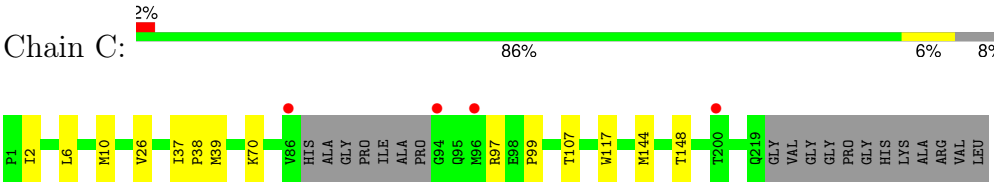
• Molecule 1: Capsid protein p24

Chain B:



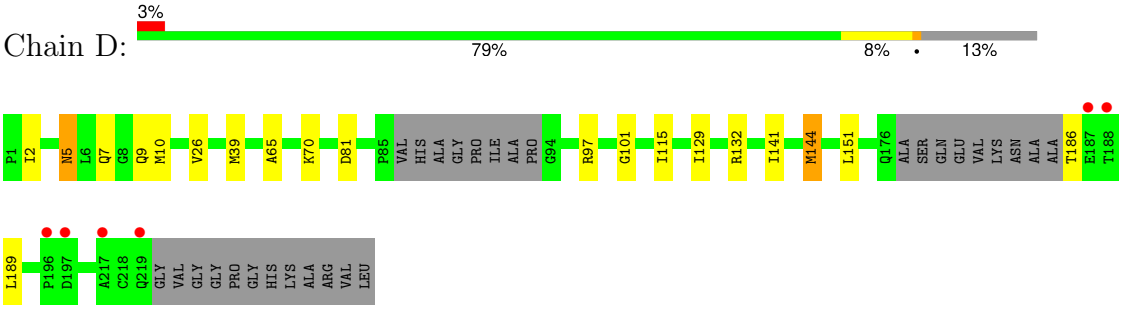
• Molecule 1: Capsid protein p24

Chain C:



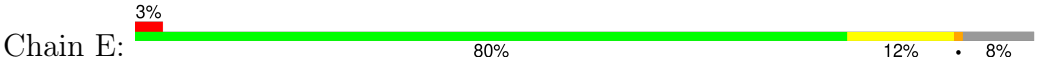
• Molecule 1: Capsid protein p24

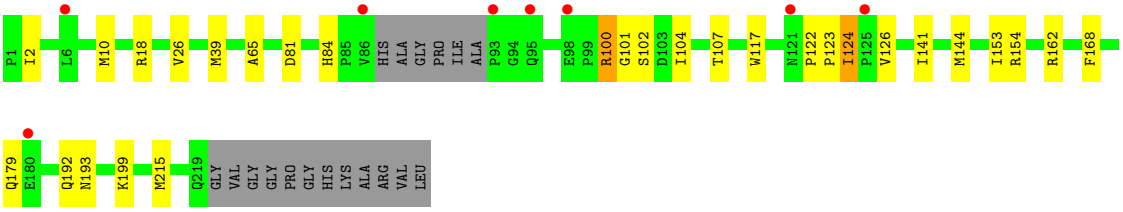
Chain D:



• Molecule 1: Capsid protein p24

Chain E:



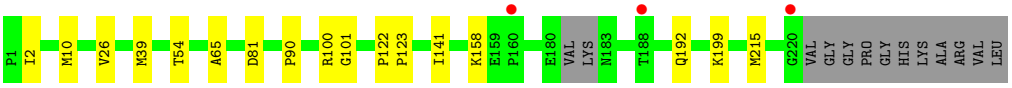


• Molecule 1: Capsid protein p24

Chain F:

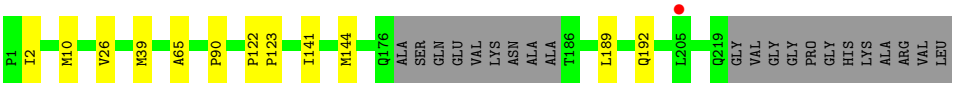
• Molecule 1: Capsid protein p24

Chain G:



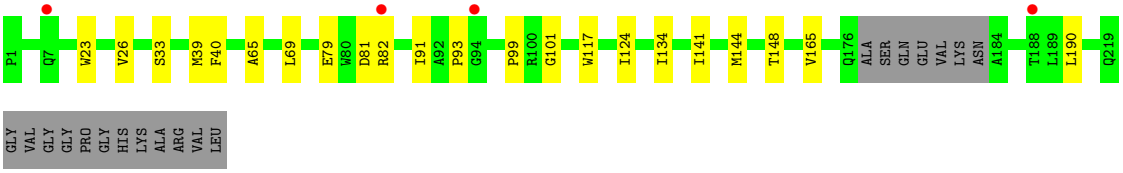
• Molecule 1: Capsid protein p24

Chain H:



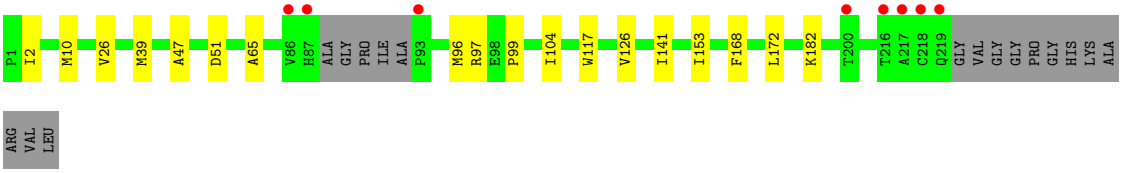
• Molecule 1: Capsid protein p24

Chain I:



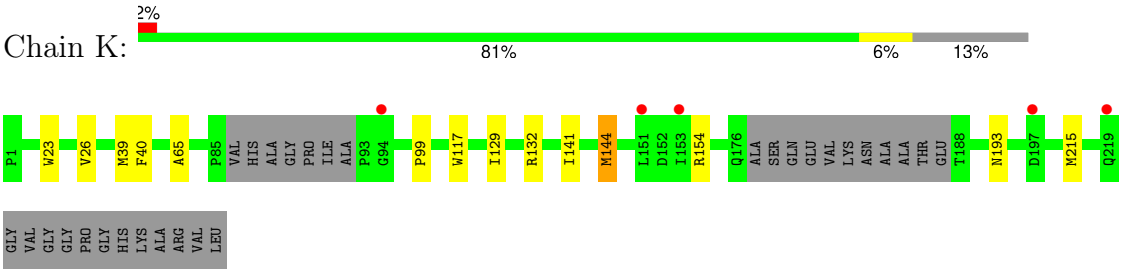
• Molecule 1: Capsid protein p24

Chain J:



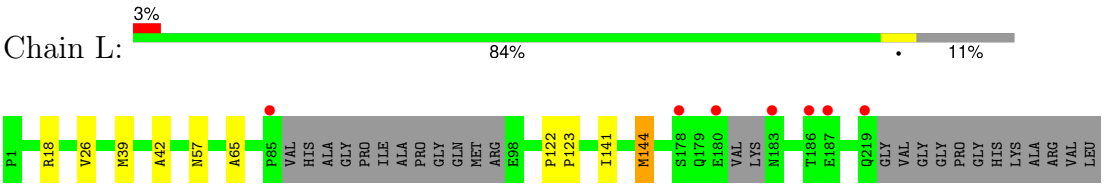
• Molecule 1: Capsid protein p24

Chain K:



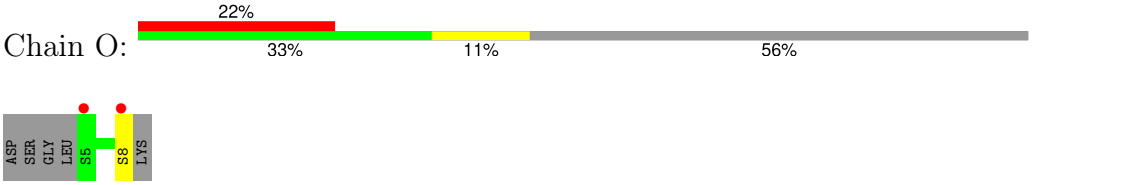
• Molecule 1: Capsid protein p24

Chain L:



• Molecule 2: FG peptide

Chain O:



• Molecule 2: FG peptide

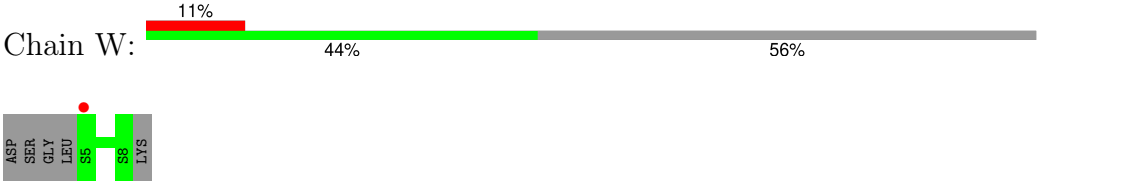
Chain P:

• Molecule 2: FG peptide

Chain S:

• Molecule 2: FG peptide

Chain W:

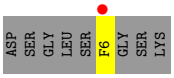


• Molecule 2: FG peptide

Chain X:

• Molecule 2: FG peptide

Chain M:



• Molecule 2: FG peptide

Chain Q:

• Molecule 2: FG peptide

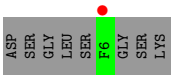
Chain R:

• Molecule 2: FG peptide

Chain U:

• Molecule 2: FG peptide

Chain V:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	135.91Å 136.40Å 207.30Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	33.07 – 3.10 33.07 – 3.10	Depositor EDS
% Data completeness (in resolution range)	96.0 (33.07-3.10) 95.9 (33.07-3.10)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.15	Depositor
$< I/\sigma(I) >$ [1]	1.86 (at 3.12Å)	Xtriage
Refinement program	PHENIX 1.21_5207	Depositor
R, R_{free}	0.219 , 0.252 0.219 , 0.252	Depositor DCC
R_{free} test set	3441 reflections (4.88%)	wwPDB-VP
Wilson B-factor (Å^2)	64.6	Xtriage
Anisotropy	0.079	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.29 , 21.8	EDS
L-test for twinning[2]	$< \|L\| > = 0.48$, $< L^2 > = 0.31$	Xtriage
Estimated twinning fraction	0.036 for k,h,-l	Xtriage
F_o,F_c correlation	0.91	EDS
Total number of atoms	19347	wwPDB-VP
Average B, all atoms (Å^2)	68.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.75% of the height of the origin peak. No significant pseudotranslation is detected.*

[1]Intensities estimated from amplitudes.

[2]Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

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

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	0.09	0/1664	0.21	0/2268
1	B	0.08	0/1618	0.20	0/2198
1	C	0.09	0/1655	0.21	0/2250
1	D	0.08	0/1566	0.21	0/2129
1	E	0.08	0/1646	0.21	0/2239
1	F	0.08	0/1698	0.20	0/2312
1	G	0.09	0/1699	0.20	0/2312
1	H	0.08	0/1629	0.20	0/2219
1	I	0.08	0/1631	0.20	0/2223
1	J	0.09	0/1668	0.22	0/2267
1	K	0.08	0/1558	0.19	0/2119
1	L	0.08	0/1572	0.20	0/2143
2	M	0.05	0/11	0.06	0/13
2	O	0.07	0/25	0.26	0/32
2	P	0.05	0/16	0.06	0/20
2	Q	0.05	0/11	0.05	0/13
2	R	0.07	0/11	0.09	0/13
2	S	0.06	0/16	0.09	0/20
2	U	0.08	0/11	0.10	0/13
2	V	0.05	0/11	0.08	0/13
2	W	0.04	0/25	0.15	0/32
2	X	0.05	0/15	0.09	0/18
All	All	0.08	0/19756	0.20	0/26866

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (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	1628	0	1571	10	0
1	B	1586	0	1556	7	0
1	C	1622	0	1584	9	0
1	D	1534	0	1464	13	0
1	E	1612	0	1570	16	0
1	F	1661	0	1611	5	0
1	G	1663	0	1620	10	0
1	H	1593	0	1545	8	0
1	I	1595	0	1554	12	0
1	J	1634	0	1594	11	0
1	K	1525	0	1465	8	0
1	L	1540	0	1475	7	0
2	M	11	0	8	2	0
2	O	25	0	15	1	0
2	P	16	0	10	0	0
2	Q	11	0	8	0	0
2	R	11	0	8	0	0
2	S	16	0	10	0	0
2	U	11	0	8	0	0
2	V	11	0	8	0	0
2	W	25	0	15	0	0
2	X	15	0	11	1	0
3	B	1	0	0	2	0
3	G	1	0	0	1	0
All	All	19347	0	18710	105	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 3.

The worst 5 of 105 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)
3:G:301:CL:CL	1:L:18:ARG:NH2	2.52	0.80
1:B:18:ARG:NH2	3:B:301:CL:CL	2.65	0.67
1:E:104:ILE:HG12	1:E:126:VAL:HG12	1.77	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:70:LYS:HG3	2:M:6:PHE:HB3	1.81	0.62
1:E:84:HIS:O	1:E:100:ARG:NH2	2.33	0.61

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	214/231 (93%)	210 (98%)	4 (2%)	0	100	100
1	B	201/231 (87%)	196 (98%)	5 (2%)	0	100	100
1	C	208/231 (90%)	200 (96%)	8 (4%)	0	100	100
1	D	196/231 (85%)	190 (97%)	6 (3%)	0	100	100
1	E	209/231 (90%)	202 (97%)	7 (3%)	0	100	100
1	F	217/231 (94%)	212 (98%)	5 (2%)	0	100	100
1	G	214/231 (93%)	205 (96%)	9 (4%)	0	100	100
1	H	206/231 (89%)	202 (98%)	4 (2%)	0	100	100
1	I	208/231 (90%)	203 (98%)	5 (2%)	0	100	100
1	J	210/231 (91%)	199 (95%)	11 (5%)	0	100	100
1	K	195/231 (84%)	189 (97%)	6 (3%)	0	100	100
1	L	199/231 (86%)	192 (96%)	7 (4%)	0	100	100
2	O	2/9 (22%)	2 (100%)	0	0	100	100
2	W	2/9 (22%)	2 (100%)	0	0	100	100
All	All	2481/2790 (89%)	2404 (97%)	77 (3%)	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	167/193 (86%)	167 (100%)	0	100	100
1	B	169/193 (88%)	167 (99%)	2 (1%)	67	83
1	C	172/193 (89%)	171 (99%)	1 (1%)	84	91
1	D	159/193 (82%)	156 (98%)	3 (2%)	52	75
1	E	168/193 (87%)	165 (98%)	3 (2%)	54	76
1	F	172/193 (89%)	171 (99%)	1 (1%)	84	91
1	G	175/193 (91%)	174 (99%)	1 (1%)	84	91
1	H	167/193 (86%)	167 (100%)	0	100	100
1	I	166/193 (86%)	164 (99%)	2 (1%)	67	83
1	J	173/193 (90%)	173 (100%)	0	100	100
1	K	159/193 (82%)	158 (99%)	1 (1%)	84	91
1	L	159/193 (82%)	158 (99%)	1 (1%)	84	91
2	M	1/7 (14%)	1 (100%)	0	100	100
2	O	1/7 (14%)	1 (100%)	0	100	100
2	P	1/7 (14%)	1 (100%)	0	100	100
2	Q	1/7 (14%)	1 (100%)	0	100	100
2	R	1/7 (14%)	1 (100%)	0	100	100
2	S	1/7 (14%)	1 (100%)	0	100	100
2	U	1/7 (14%)	1 (100%)	0	100	100
2	V	1/7 (14%)	1 (100%)	0	100	100
2	W	1/7 (14%)	1 (100%)	0	100	100
2	X	1/7 (14%)	1 (100%)	0	100	100
All	All	2016/2386 (84%)	2001 (99%)	15 (1%)	81	90

5 of 15 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	E	124	ILE
1	K	144	MET
1	E	144	MET
1	L	144	MET
1	I	33	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 13 such sidechains are listed below:

Mol	Chain	Res	Type
1	H	95	GLN
1	I	67	GLN
1	L	57	ASN
1	J	95	GLN
1	K	155	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 oligosaccharides 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

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, 95^{th} 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	218/231 (94%)	-0.09	8 (3%) 45 27	38, 58, 106, 127	0
1	B	207/231 (89%)	-0.18	0 100 100	40, 62, 91, 111	0
1	C	212/231 (91%)	-0.15	4 (1%) 66 47	37, 59, 102, 138	0
1	D	202/231 (87%)	0.01	6 (2%) 52 33	36, 61, 125, 148	0
1	E	213/231 (92%)	-0.03	8 (3%) 44 26	36, 62, 104, 140	0
1	F	219/231 (94%)	-0.16	1 (0%) 87 75	38, 62, 101, 117	0
1	G	218/231 (94%)	-0.07	3 (1%) 73 56	44, 67, 109, 130	0
1	H	210/231 (90%)	0.05	1 (0%) 87 75	43, 69, 115, 152	0
1	I	212/231 (91%)	-0.04	4 (1%) 66 47	42, 68, 101, 128	0
1	J	214/231 (92%)	-0.07	8 (3%) 45 27	39, 59, 112, 146	0
1	K	201/231 (87%)	0.06	5 (2%) 58 39	40, 65, 128, 159	0
1	L	205/231 (88%)	0.05	7 (3%) 48 28	43, 70, 114, 146	0
2	M	1/9 (11%)	2.22	1 (100%) 0 0	73, 73, 73, 73	1 (100%)
2	O	4/9 (44%)	2.29	2 (50%) 0 0	73, 78, 81, 104	0
2	P	2/9 (22%)	2.31	1 (50%) 0 0	48, 48, 48, 57	2 (100%)
2	Q	1/9 (11%)	0.68	0 100 100	70, 70, 70, 70	0
2	R	1/9 (11%)	1.35	0 100 100	63, 63, 63, 63	1 (100%)
2	S	2/9 (22%)	2.51	1 (50%) 0 0	61, 61, 61, 82	0
2	U	1/9 (11%)	1.98	0 100 100	94, 94, 94, 94	0
2	V	1/9 (11%)	3.24	1 (100%) 0 0	72, 72, 72, 72	0
2	W	4/9 (44%)	1.23	1 (25%) 2 1	56, 59, 62, 66	4 (100%)
2	X	2/9 (22%)	1.81	0 100 100	75, 75, 75, 84	0
All	All	2550/2862 (89%)	-0.04	62 (2%) 59 41	36, 64, 111, 159	8 (0%)

The worst 5 of 62 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	219	GLN	5.9
1	J	217	ALA	4.9
2	S	5	SER	4.1
1	E	95	GLN	4.1
1	A	181	VAL	3.9

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)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	CL	G	301	1/1	0.90	0.05	68,68,68,68	0
3	CL	B	301	1/1	0.95	0.05	77,77,77,77	0

6.5 Other polymers (i)

There are no such residues in this entry.