



wwPDB X-ray Structure Validation Summary Report ⓘ

Feb 21, 2024 – 04:09 PM EST

PDB ID : 4NSC
Title : Crystal Structure of CBARA1 in the Apo-form
Authors : Wang, L.; Yang, X.; Li, S.; Shen, Y.
Deposited on : 2013-11-28
Resolution : 3.20 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 ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

MolProbity : 4.02b-467
Xtriage (Phenix) : 1.13
EDS : 2.36
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36

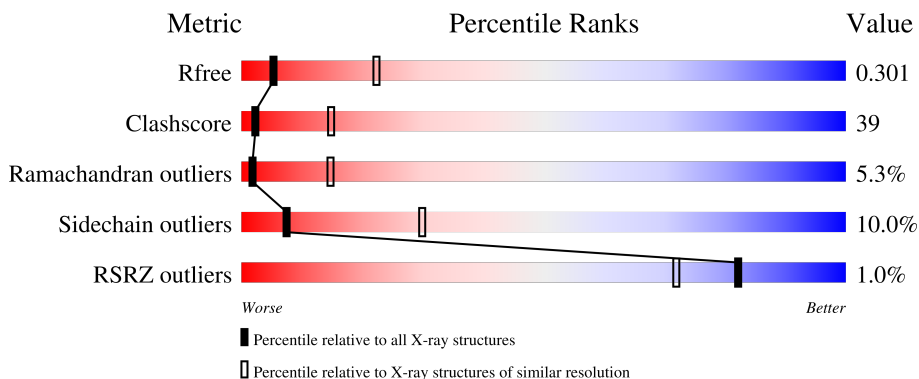
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.20 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	1133 (3.20-3.20)
Clashscore	141614	1253 (3.20-3.20)
Ramachandran outliers	138981	1234 (3.20-3.20)
Sidechain outliers	138945	1233 (3.20-3.20)
RSRZ outliers	127900	1095 (3.20-3.20)

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	401	
1	B	401	
1	C	401	
1	D	401	
1	E	401	

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Mol	Chain	Length	Quality of chain
1	F	401	 34% 35% 7% 23%

2 Entry composition [i](#)

There are 2 unique types of molecules in this entry. The entry contains 15349 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 Calcium uptake protein 1, mitochondrial.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	310	Total 2472	C 1583	N 419	O 454	S 16	0	0	0
1	B	316	Total 2539	C 1622	N 426	O 473	S 18	0	0	0
1	C	330	Total 2619	C 1673	N 442	O 486	S 18	0	0	0
1	D	326	Total 2604	C 1662	N 438	O 487	S 17	0	0	0
1	E	330	Total 2598	C 1657	N 439	O 487	S 15	0	0	0
1	F	310	Total 2504	C 1601	N 422	O 468	S 13	0	0	0

There are 126 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	76	MET	-	expression tag	UNP Q9BPX6
A	77	HIS	-	expression tag	UNP Q9BPX6
A	78	HIS	-	expression tag	UNP Q9BPX6
A	79	HIS	-	expression tag	UNP Q9BPX6
A	80	HIS	-	expression tag	UNP Q9BPX6
A	81	HIS	-	expression tag	UNP Q9BPX6
A	82	HIS	-	expression tag	UNP Q9BPX6
A	83	SER	-	expression tag	UNP Q9BPX6
A	84	SER	-	expression tag	UNP Q9BPX6
A	85	GLY	-	expression tag	UNP Q9BPX6
A	86	LEU	-	expression tag	UNP Q9BPX6
A	87	GLU	-	expression tag	UNP Q9BPX6
A	88	VAL	-	expression tag	UNP Q9BPX6
A	89	LEU	-	expression tag	UNP Q9BPX6
A	90	PHE	-	expression tag	UNP Q9BPX6
A	91	GLN	-	expression tag	UNP Q9BPX6
A	92	GLY	-	expression tag	UNP Q9BPX6

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Chain	Residue	Modelled	Actual	Comment	Reference
A	93	PRO	-	expression tag	UNP Q9BPX6
A	94	GLY	-	expression tag	UNP Q9BPX6
A	95	SER	-	expression tag	UNP Q9BPX6
A	96	MET	-	expression tag	UNP Q9BPX6
B	76	MET	-	expression tag	UNP Q9BPX6
B	77	HIS	-	expression tag	UNP Q9BPX6
B	78	HIS	-	expression tag	UNP Q9BPX6
B	79	HIS	-	expression tag	UNP Q9BPX6
B	80	HIS	-	expression tag	UNP Q9BPX6
B	81	HIS	-	expression tag	UNP Q9BPX6
B	82	HIS	-	expression tag	UNP Q9BPX6
B	83	SER	-	expression tag	UNP Q9BPX6
B	84	SER	-	expression tag	UNP Q9BPX6
B	85	GLY	-	expression tag	UNP Q9BPX6
B	86	LEU	-	expression tag	UNP Q9BPX6
B	87	GLU	-	expression tag	UNP Q9BPX6
B	88	VAL	-	expression tag	UNP Q9BPX6
B	89	LEU	-	expression tag	UNP Q9BPX6
B	90	PHE	-	expression tag	UNP Q9BPX6
B	91	GLN	-	expression tag	UNP Q9BPX6
B	92	GLY	-	expression tag	UNP Q9BPX6
B	93	PRO	-	expression tag	UNP Q9BPX6
B	94	GLY	-	expression tag	UNP Q9BPX6
B	95	SER	-	expression tag	UNP Q9BPX6
B	96	MET	-	expression tag	UNP Q9BPX6
C	76	MET	-	expression tag	UNP Q9BPX6
C	77	HIS	-	expression tag	UNP Q9BPX6
C	78	HIS	-	expression tag	UNP Q9BPX6
C	79	HIS	-	expression tag	UNP Q9BPX6
C	80	HIS	-	expression tag	UNP Q9BPX6
C	81	HIS	-	expression tag	UNP Q9BPX6
C	82	HIS	-	expression tag	UNP Q9BPX6
C	83	SER	-	expression tag	UNP Q9BPX6
C	84	SER	-	expression tag	UNP Q9BPX6
C	85	GLY	-	expression tag	UNP Q9BPX6
C	86	LEU	-	expression tag	UNP Q9BPX6
C	87	GLU	-	expression tag	UNP Q9BPX6
C	88	VAL	-	expression tag	UNP Q9BPX6
C	89	LEU	-	expression tag	UNP Q9BPX6
C	90	PHE	-	expression tag	UNP Q9BPX6
C	91	GLN	-	expression tag	UNP Q9BPX6
C	92	GLY	-	expression tag	UNP Q9BPX6

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Chain	Residue	Modelled	Actual	Comment	Reference
C	93	PRO	-	expression tag	UNP Q9BPX6
C	94	GLY	-	expression tag	UNP Q9BPX6
C	95	SER	-	expression tag	UNP Q9BPX6
C	96	MET	-	expression tag	UNP Q9BPX6
D	76	MET	-	expression tag	UNP Q9BPX6
D	77	HIS	-	expression tag	UNP Q9BPX6
D	78	HIS	-	expression tag	UNP Q9BPX6
D	79	HIS	-	expression tag	UNP Q9BPX6
D	80	HIS	-	expression tag	UNP Q9BPX6
D	81	HIS	-	expression tag	UNP Q9BPX6
D	82	HIS	-	expression tag	UNP Q9BPX6
D	83	SER	-	expression tag	UNP Q9BPX6
D	84	SER	-	expression tag	UNP Q9BPX6
D	85	GLY	-	expression tag	UNP Q9BPX6
D	86	LEU	-	expression tag	UNP Q9BPX6
D	87	GLU	-	expression tag	UNP Q9BPX6
D	88	VAL	-	expression tag	UNP Q9BPX6
D	89	LEU	-	expression tag	UNP Q9BPX6
D	90	PHE	-	expression tag	UNP Q9BPX6
D	91	GLN	-	expression tag	UNP Q9BPX6
D	92	GLY	-	expression tag	UNP Q9BPX6
D	93	PRO	-	expression tag	UNP Q9BPX6
D	94	GLY	-	expression tag	UNP Q9BPX6
D	95	SER	-	expression tag	UNP Q9BPX6
D	96	MET	-	expression tag	UNP Q9BPX6
E	76	MET	-	expression tag	UNP Q9BPX6
E	77	HIS	-	expression tag	UNP Q9BPX6
E	78	HIS	-	expression tag	UNP Q9BPX6
E	79	HIS	-	expression tag	UNP Q9BPX6
E	80	HIS	-	expression tag	UNP Q9BPX6
E	81	HIS	-	expression tag	UNP Q9BPX6
E	82	HIS	-	expression tag	UNP Q9BPX6
E	83	SER	-	expression tag	UNP Q9BPX6
E	84	SER	-	expression tag	UNP Q9BPX6
E	85	GLY	-	expression tag	UNP Q9BPX6
E	86	LEU	-	expression tag	UNP Q9BPX6
E	87	GLU	-	expression tag	UNP Q9BPX6
E	88	VAL	-	expression tag	UNP Q9BPX6
E	89	LEU	-	expression tag	UNP Q9BPX6
E	90	PHE	-	expression tag	UNP Q9BPX6
E	91	GLN	-	expression tag	UNP Q9BPX6
E	92	GLY	-	expression tag	UNP Q9BPX6

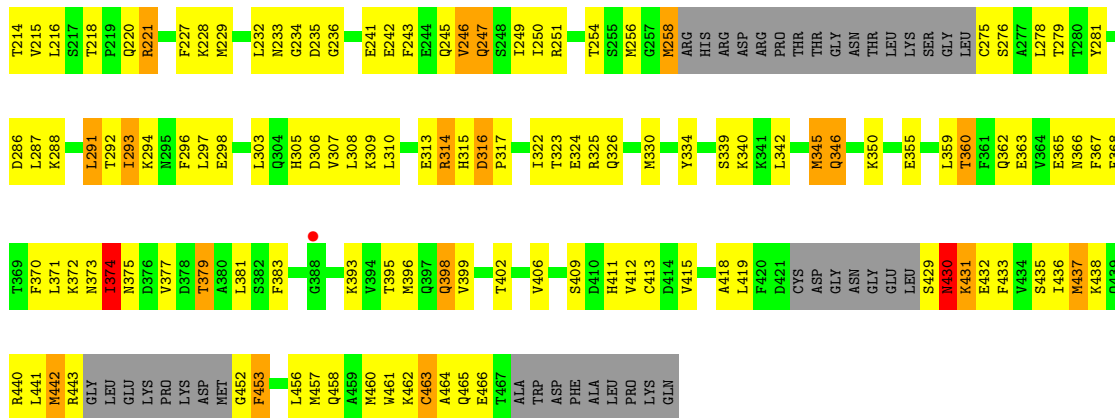
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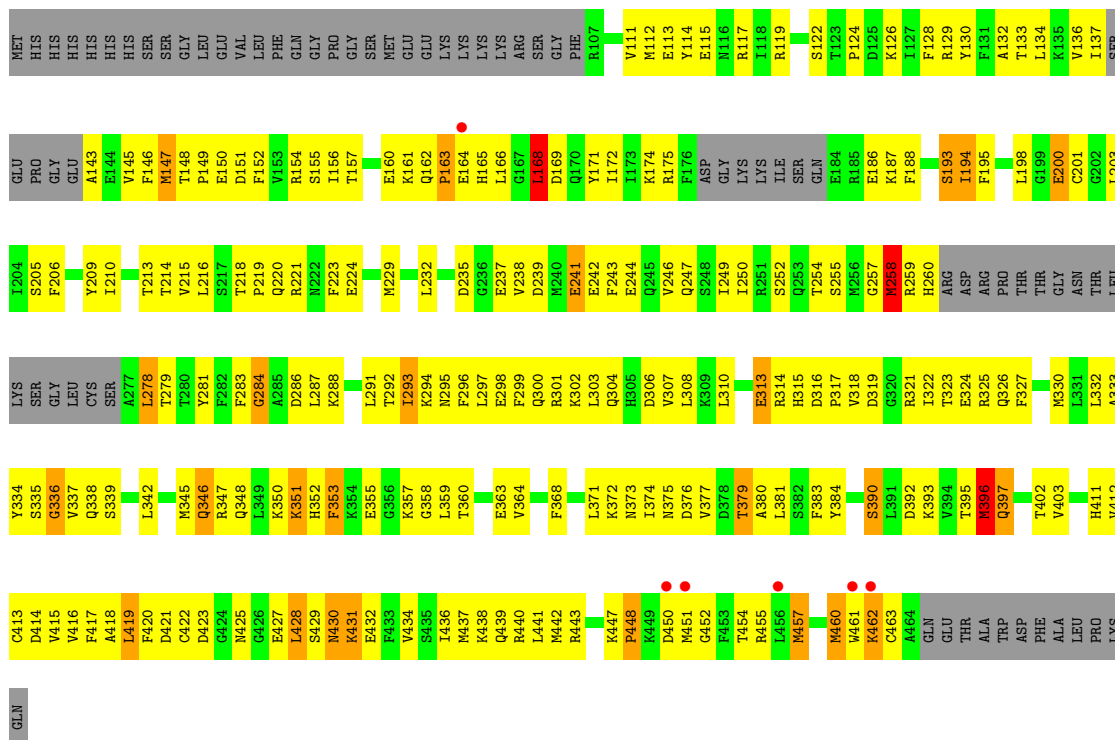
Chain	Residue	Modelled	Actual	Comment	Reference
E	93	PRO	-	expression tag	UNP Q9BPX6
E	94	GLY	-	expression tag	UNP Q9BPX6
E	95	SER	-	expression tag	UNP Q9BPX6
E	96	MET	-	expression tag	UNP Q9BPX6
F	76	MET	-	expression tag	UNP Q9BPX6
F	77	HIS	-	expression tag	UNP Q9BPX6
F	78	HIS	-	expression tag	UNP Q9BPX6
F	79	HIS	-	expression tag	UNP Q9BPX6
F	80	HIS	-	expression tag	UNP Q9BPX6
F	81	HIS	-	expression tag	UNP Q9BPX6
F	82	HIS	-	expression tag	UNP Q9BPX6
F	83	SER	-	expression tag	UNP Q9BPX6
F	84	SER	-	expression tag	UNP Q9BPX6
F	85	GLY	-	expression tag	UNP Q9BPX6
F	86	LEU	-	expression tag	UNP Q9BPX6
F	87	GLU	-	expression tag	UNP Q9BPX6
F	88	VAL	-	expression tag	UNP Q9BPX6
F	89	LEU	-	expression tag	UNP Q9BPX6
F	90	PHE	-	expression tag	UNP Q9BPX6
F	91	GLN	-	expression tag	UNP Q9BPX6
F	92	GLY	-	expression tag	UNP Q9BPX6
F	93	PRO	-	expression tag	UNP Q9BPX6
F	94	GLY	-	expression tag	UNP Q9BPX6
F	95	SER	-	expression tag	UNP Q9BPX6
F	96	MET	-	expression tag	UNP Q9BPX6

- Molecule 2 is water.

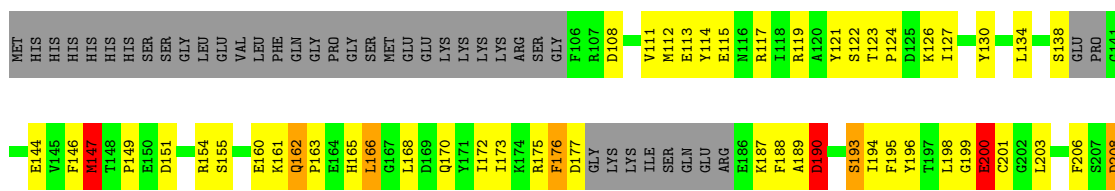
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	4	Total O 4 4	0	0
2	B	3	Total O 3 3	0	0
2	C	1	Total O 1 1	0	0
2	D	1	Total O 1 1	0	0
2	F	4	Total O 4 4	0	0

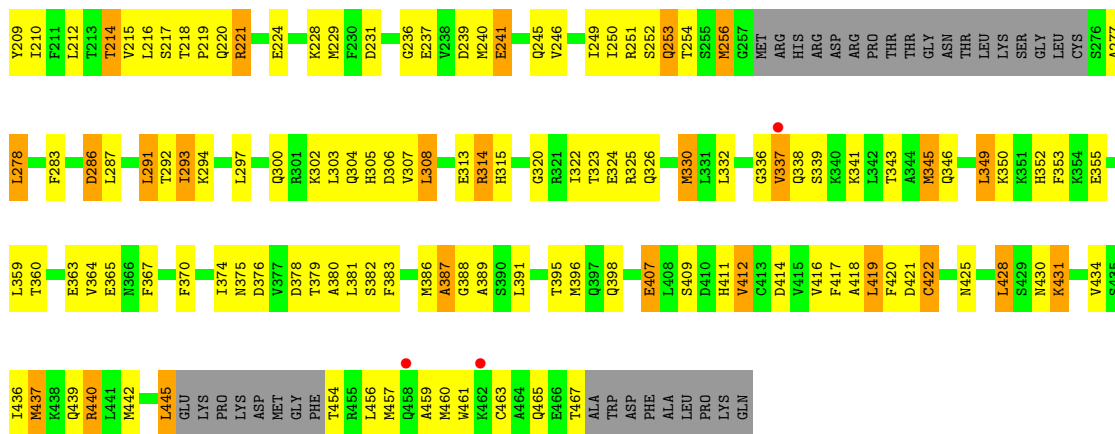


● Molecule 1: Calcium uptake protein 1, mitochondrial

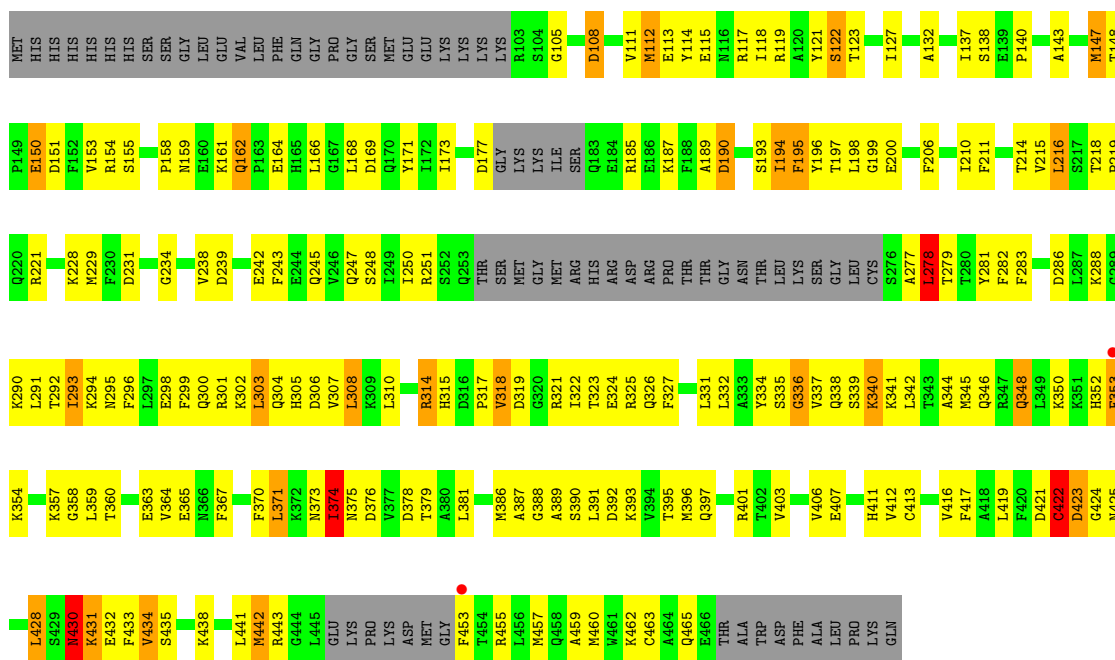


● Molecule 1: Calcium uptake protein 1, mitochondrial

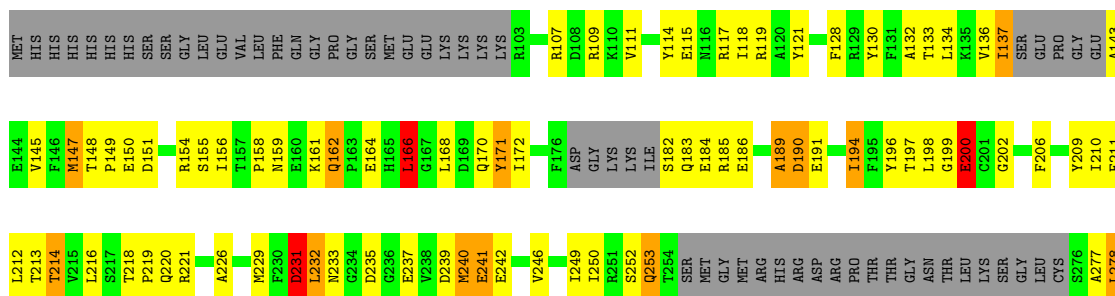




• Molecule 1: Calcium uptake protein 1, mitochondrial



• Molecule 1: Calcium uptake protein 1, mitochondrial



T379	T360	E432	GLY
T280	F361	F433	LEU
Y281	E365	V434	GLU
F283	N366	S435	LYS
D286	F367	I436	PRO
L287	F368	M437	LYS
L291	T369	K438	ASP
T292	F370	Q439	MET
I293	L371	R440	GLY
K294	K372	M441	PHE
L297	N373	L441	THR
L303	I374	M442	ARG
D306	N375	R443	LEU
V307	D376	LEU	MET
L308	V377	GLU	GLN
K309	D378	LYS	ALA
L310	T379	LYS	MET
E313	F383	TRP	LYS
R314	M386	ARG	CYS
H315	S390	LEU	ALA
V318	K393	MET	GLN
D319	V394	GLN	GLU
G320	T395	THR	THR
R321	M396	ALA	ALA
I322	V399	TRP	TRP
T323	T402	LYS	ASP
E324	V403	ALA	PHE
R325	A404	GLN	ALA
Q326	K405	GLU	LEU
F327	L408	THR	PRO
M330	S409	ALA	LYS
G336	D410	TRP	GLN
V337	H411	ASP	
Q338	V412	PHE	
S339	C413	ALA	
K340	D414	LEU	
M345	V415	PRO	
Q346	V416	LYS	
Q346	F417	GLN	
Q346	A418		
L349	L419		
K350	F420		
K351	D421		
H352	C422		
F353	D423		
K354	G424		
E355	N425		
G356	G426		
K357	E427		
	L428		
	K431		

4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	90.88Å 146.82Å 115.87Å 90.00° 111.08° 90.00°	Depositor
Resolution (Å)	36.72 – 3.20 36.71 – 3.20	Depositor EDS
% Data completeness (in resolution range)	92.3 (36.72-3.20) 92.4 (36.71-3.20)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.31 (at 3.18Å)	Xtrriage
Refinement program	CNS 1.2	Depositor
R, R_{free}	0.254 , 0.307 0.254 , 0.301	Depositor DCC
R_{free} test set	2007 reflections (4.31%)	wwPDB-VP
Wilson B-factor (Å ²)	58.1	Xtrriage
Anisotropy	0.235	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.29 , 50.5	EDS
L-test for twinning ²	$\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.30$	Xtrriage
Estimated twinning fraction	0.026 for h,-k,-h-l	Xtrriage
F_o, F_c correlation	0.88	EDS
Total number of atoms	15349	wwPDB-VP
Average B, all atoms (Å ²)	69.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.12% 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	0.61	10/2517 (0.4%)	0.66	1/3379 (0.0%)
1	B	0.67	10/2581 (0.4%)	0.68	0/3456
1	C	0.65	9/2665 (0.3%)	0.68	1/3577 (0.0%)
1	D	0.69	8/2649 (0.3%)	0.73	0/3551
1	E	0.62	4/2644 (0.2%)	0.73	1/3550 (0.0%)
1	F	0.64	5/2549 (0.2%)	0.74	2/3418 (0.1%)
All	All	0.65	46/15605 (0.3%)	0.71	5/20931 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	B	0	1

The worst 5 of 46 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	147	MET	CG-SD	9.03	2.04	1.81
1	D	147	MET	CG-SD	8.10	2.02	1.81
1	D	229	MET	CG-SD	7.68	2.01	1.81
1	F	442	MET	CG-SD	7.67	2.01	1.81
1	D	256	MET	CG-SD	7.62	2.00	1.81

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	448	PRO	N-CA-CB	6.02	110.52	103.30
1	F	356	GLY	N-CA-C	5.90	127.85	113.10
1	E	278	LEU	CA-CB-CG	5.53	128.02	115.30
1	F	166	LEU	CA-CB-CG	-5.36	102.97	115.30
1	A	441	LEU	CA-CB-CG	5.26	127.39	115.30

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	B	196	TYR	Sidechain

5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2472	0	2397	221	0
1	B	2539	0	2496	197	0
1	C	2619	0	2542	230	0
1	D	2604	0	2547	208	0
1	E	2598	0	2494	184	1
1	F	2504	0	2458	197	1
2	A	4	0	0	0	0
2	B	3	0	0	0	0
2	C	1	0	0	0	0
2	D	1	0	0	0	0
2	F	4	0	0	0	0
All	All	15349	0	14934	1171	1

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 39.

The worst 5 of 1171 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:D:147:MET:SD	1:D:147:MET:CG	2.02	1.48
1:C:147:MET:CG	1:C:147:MET:SD	2.04	1.44
1:C:323:THR:HB	1:C:326:GLN:HG3	1.23	1.14
1:F:323:THR:HB	1:F:326:GLN:HG3	1.23	1.14
1:E:323:THR:HB	1:E:326:GLN:HG3	1.28	1.14

All (1) 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)
1:E:171:TYR:O	1:F:357:LYS:NZ[2_756]	2.10	0.10

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	300/401 (75%)	227 (76%)	54 (18%)	19 (6%)	1	10
1	B	304/401 (76%)	235 (77%)	53 (17%)	16 (5%)	2	15
1	C	322/401 (80%)	248 (77%)	56 (17%)	18 (6%)	2	14
1	D	316/401 (79%)	262 (83%)	39 (12%)	15 (5%)	2	17
1	E	322/401 (80%)	261 (81%)	47 (15%)	14 (4%)	2	20
1	F	302/401 (75%)	237 (78%)	49 (16%)	16 (5%)	2	15
All	All	1866/2406 (78%)	1470 (79%)	298 (16%)	98 (5%)	2	15

5 of 98 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	166	LEU
1	A	172	ILE
1	A	354	LYS
1	A	453	PHE
1	B	374	ILE

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	259/354 (73%)	232 (90%)	27 (10%)	7	28
1	B	273/354 (77%)	243 (89%)	30 (11%)	6	26
1	C	274/354 (77%)	249 (91%)	25 (9%)	9	34
1	D	278/354 (78%)	256 (92%)	22 (8%)	12	43
1	E	269/354 (76%)	240 (89%)	29 (11%)	6	27
1	F	270/354 (76%)	241 (89%)	29 (11%)	6	27
All	All	1623/2124 (76%)	1461 (90%)	162 (10%)	7	30

5 of 162 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	E	303	LEU
1	F	235	ASP
1	E	340	LYS
1	E	430	ASN
1	F	293	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 74 such sidechains are listed below:

Mol	Chain	Res	Type
1	E	300	GLN
1	F	397	GLN
1	E	315	HIS
1	E	439	GLN
1	C	162	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 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 [i](#)

6.1 Protein, DNA and RNA chains [i](#)

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	310/401 (77%)	0.09	7 (2%) 60 47	62, 86, 113, 127	0
1	B	316/401 (78%)	-0.11	2 (0%) 89 83	41, 73, 104, 122	0
1	C	330/401 (82%)	-0.15	6 (1%) 68 55	44, 70, 97, 114	0
1	D	326/401 (81%)	-0.17	3 (0%) 84 75	36, 60, 89, 111	0
1	E	330/401 (82%)	-0.30	2 (0%) 89 83	32, 59, 107, 122	0
1	F	310/401 (77%)	-0.33	0 100 100	36, 58, 95, 112	0
All	All	1922/2406 (79%)	-0.16	20 (1%) 82 72	32, 69, 104, 127	0

The worst 5 of 20 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	461	TRP	5.1
1	C	462	LYS	3.6
1	A	124	PRO	3.4
1	E	453	PHE	3.1
1	C	456	LEU	3.0

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.