



# Full wwPDB X-ray Structure Validation Report ⓘ

Mar 19, 2026 – 08:49 PM UTC

PDB ID : 5HY4 / pdb\_00005hy4  
Title : Structure-function analysis of functionally diverse members of the cyclic amide hydrolase family of Toblerone fold enzymes  
Authors : Peat, T.S.; Balotra, S.; Wilding, M.; Newman, J.; Scott, C.  
Deposited on : 2016-02-01  
Resolution : 2.56 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](mailto: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>.

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

MolProbity : 4-5-2 with Phenix2.0  
Xtriage (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

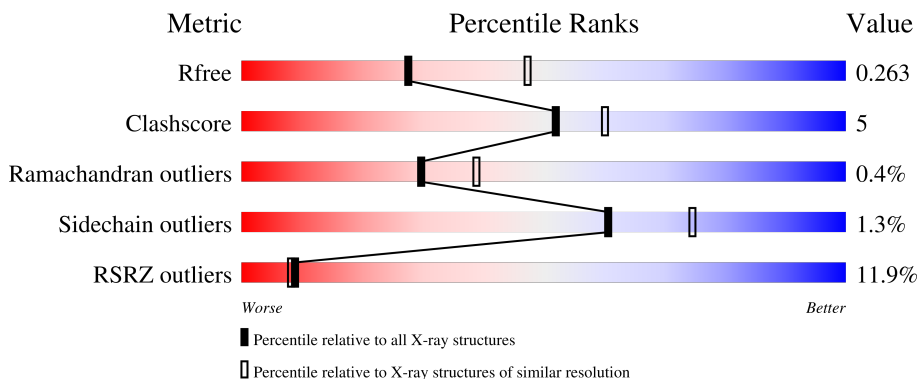
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.56 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.



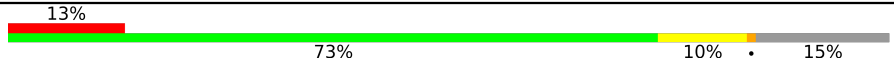
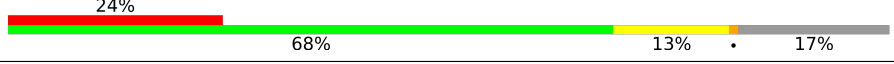

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
$R_{free}$	180053	1853 (2.58-2.54)
Clashscore	190562	1897 (2.58-2.54)
Ramachandran outliers	187476	1875 (2.58-2.54)
Sidechain outliers	187428	1875 (2.58-2.54)
RSRZ outliers	180081	1853 (2.58-2.54)

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  $\geq 3$ , 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	410	
1	B	410	
1	C	410	
1	D	410	
1	E	410	

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Mol	Chain	Length	Quality of chain
1	F	410	
1	G	410	
1	H	410	

## 2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 19841 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 Ring-opening amidohydrolase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	361	Total 2565	C 1590	N 463	O 501	S 11	0	1	0
1	B	360	Total 2586	C 1606	N 472	O 497	S 11	0	2	0
1	C	348	Total 2430	C 1509	N 437	O 473	S 11	0	2	0
1	D	333	Total 2349	C 1457	N 423	O 459	S 10	0	2	0
1	E	349	Total 2482	C 1538	N 451	O 483	S 10	0	3	0
1	F	350	Total 2461	C 1529	N 439	O 482	S 11	0	1	0
1	G	340	Total 2371	C 1472	N 421	O 467	S 11	0	1	0
1	H	328	Total 2341	C 1454	N 424	O 452	S 11	0	2	0

There are 160 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-19	MET	-	initiating methionine	UNP E3JD18
A	-18	GLY	-	expression tag	UNP E3JD18
A	-17	SER	-	expression tag	UNP E3JD18
A	-16	SER	-	expression tag	UNP E3JD18
A	-15	HIS	-	expression tag	UNP E3JD18
A	-14	HIS	-	expression tag	UNP E3JD18
A	-13	HIS	-	expression tag	UNP E3JD18
A	-12	HIS	-	expression tag	UNP E3JD18
A	-11	HIS	-	expression tag	UNP E3JD18
A	-10	HIS	-	expression tag	UNP E3JD18
A	-9	SER	-	expression tag	UNP E3JD18
A	-8	SER	-	expression tag	UNP E3JD18
A	-7	GLY	-	expression tag	UNP E3JD18

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Chain	Residue	Modelled	Actual	Comment	Reference
A	-6	LEU	-	expression tag	UNP E3JD18
A	-5	VAL	-	expression tag	UNP E3JD18
A	-4	PRO	-	expression tag	UNP E3JD18
A	-3	ARG	-	expression tag	UNP E3JD18
A	-2	GLY	-	expression tag	UNP E3JD18
A	-1	SER	-	expression tag	UNP E3JD18
A	0	HIS	-	expression tag	UNP E3JD18
B	-19	MET	-	initiating methionine	UNP E3JD18
B	-18	GLY	-	expression tag	UNP E3JD18
B	-17	SER	-	expression tag	UNP E3JD18
B	-16	SER	-	expression tag	UNP E3JD18
B	-15	HIS	-	expression tag	UNP E3JD18
B	-14	HIS	-	expression tag	UNP E3JD18
B	-13	HIS	-	expression tag	UNP E3JD18
B	-12	HIS	-	expression tag	UNP E3JD18
B	-11	HIS	-	expression tag	UNP E3JD18
B	-10	HIS	-	expression tag	UNP E3JD18
B	-9	SER	-	expression tag	UNP E3JD18
B	-8	SER	-	expression tag	UNP E3JD18
B	-7	GLY	-	expression tag	UNP E3JD18
B	-6	LEU	-	expression tag	UNP E3JD18
B	-5	VAL	-	expression tag	UNP E3JD18
B	-4	PRO	-	expression tag	UNP E3JD18
B	-3	ARG	-	expression tag	UNP E3JD18
B	-2	GLY	-	expression tag	UNP E3JD18
B	-1	SER	-	expression tag	UNP E3JD18
B	0	HIS	-	expression tag	UNP E3JD18
C	-19	MET	-	initiating methionine	UNP E3JD18
C	-18	GLY	-	expression tag	UNP E3JD18
C	-17	SER	-	expression tag	UNP E3JD18
C	-16	SER	-	expression tag	UNP E3JD18
C	-15	HIS	-	expression tag	UNP E3JD18
C	-14	HIS	-	expression tag	UNP E3JD18
C	-13	HIS	-	expression tag	UNP E3JD18
C	-12	HIS	-	expression tag	UNP E3JD18
C	-11	HIS	-	expression tag	UNP E3JD18
C	-10	HIS	-	expression tag	UNP E3JD18
C	-9	SER	-	expression tag	UNP E3JD18
C	-8	SER	-	expression tag	UNP E3JD18
C	-7	GLY	-	expression tag	UNP E3JD18
C	-6	LEU	-	expression tag	UNP E3JD18
C	-5	VAL	-	expression tag	UNP E3JD18

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Chain	Residue	Modelled	Actual	Comment	Reference
C	-4	PRO	-	expression tag	UNP E3JD18
C	-3	ARG	-	expression tag	UNP E3JD18
C	-2	GLY	-	expression tag	UNP E3JD18
C	-1	SER	-	expression tag	UNP E3JD18
C	0	HIS	-	expression tag	UNP E3JD18
D	-19	MET	-	initiating methionine	UNP E3JD18
D	-18	GLY	-	expression tag	UNP E3JD18
D	-17	SER	-	expression tag	UNP E3JD18
D	-16	SER	-	expression tag	UNP E3JD18
D	-15	HIS	-	expression tag	UNP E3JD18
D	-14	HIS	-	expression tag	UNP E3JD18
D	-13	HIS	-	expression tag	UNP E3JD18
D	-12	HIS	-	expression tag	UNP E3JD18
D	-11	HIS	-	expression tag	UNP E3JD18
D	-10	HIS	-	expression tag	UNP E3JD18
D	-9	SER	-	expression tag	UNP E3JD18
D	-8	SER	-	expression tag	UNP E3JD18
D	-7	GLY	-	expression tag	UNP E3JD18
D	-6	LEU	-	expression tag	UNP E3JD18
D	-5	VAL	-	expression tag	UNP E3JD18
D	-4	PRO	-	expression tag	UNP E3JD18
D	-3	ARG	-	expression tag	UNP E3JD18
D	-2	GLY	-	expression tag	UNP E3JD18
D	-1	SER	-	expression tag	UNP E3JD18
D	0	HIS	-	expression tag	UNP E3JD18
E	-19	MET	-	initiating methionine	UNP E3JD18
E	-18	GLY	-	expression tag	UNP E3JD18
E	-17	SER	-	expression tag	UNP E3JD18
E	-16	SER	-	expression tag	UNP E3JD18
E	-15	HIS	-	expression tag	UNP E3JD18
E	-14	HIS	-	expression tag	UNP E3JD18
E	-13	HIS	-	expression tag	UNP E3JD18
E	-12	HIS	-	expression tag	UNP E3JD18
E	-11	HIS	-	expression tag	UNP E3JD18
E	-10	HIS	-	expression tag	UNP E3JD18
E	-9	SER	-	expression tag	UNP E3JD18
E	-8	SER	-	expression tag	UNP E3JD18
E	-7	GLY	-	expression tag	UNP E3JD18
E	-6	LEU	-	expression tag	UNP E3JD18
E	-5	VAL	-	expression tag	UNP E3JD18
E	-4	PRO	-	expression tag	UNP E3JD18
E	-3	ARG	-	expression tag	UNP E3JD18

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Chain	Residue	Modelled	Actual	Comment	Reference
E	-2	GLY	-	expression tag	UNP E3JD18
E	-1	SER	-	expression tag	UNP E3JD18
E	0	HIS	-	expression tag	UNP E3JD18
F	-19	MET	-	initiating methionine	UNP E3JD18
F	-18	GLY	-	expression tag	UNP E3JD18
F	-17	SER	-	expression tag	UNP E3JD18
F	-16	SER	-	expression tag	UNP E3JD18
F	-15	HIS	-	expression tag	UNP E3JD18
F	-14	HIS	-	expression tag	UNP E3JD18
F	-13	HIS	-	expression tag	UNP E3JD18
F	-12	HIS	-	expression tag	UNP E3JD18
F	-11	HIS	-	expression tag	UNP E3JD18
F	-10	HIS	-	expression tag	UNP E3JD18
F	-9	SER	-	expression tag	UNP E3JD18
F	-8	SER	-	expression tag	UNP E3JD18
F	-7	GLY	-	expression tag	UNP E3JD18
F	-6	LEU	-	expression tag	UNP E3JD18
F	-5	VAL	-	expression tag	UNP E3JD18
F	-4	PRO	-	expression tag	UNP E3JD18
F	-3	ARG	-	expression tag	UNP E3JD18
F	-2	GLY	-	expression tag	UNP E3JD18
F	-1	SER	-	expression tag	UNP E3JD18
F	0	HIS	-	expression tag	UNP E3JD18
G	-19	MET	-	initiating methionine	UNP E3JD18
G	-18	GLY	-	expression tag	UNP E3JD18
G	-17	SER	-	expression tag	UNP E3JD18
G	-16	SER	-	expression tag	UNP E3JD18
G	-15	HIS	-	expression tag	UNP E3JD18
G	-14	HIS	-	expression tag	UNP E3JD18
G	-13	HIS	-	expression tag	UNP E3JD18
G	-12	HIS	-	expression tag	UNP E3JD18
G	-11	HIS	-	expression tag	UNP E3JD18
G	-10	HIS	-	expression tag	UNP E3JD18
G	-9	SER	-	expression tag	UNP E3JD18
G	-8	SER	-	expression tag	UNP E3JD18
G	-7	GLY	-	expression tag	UNP E3JD18
G	-6	LEU	-	expression tag	UNP E3JD18
G	-5	VAL	-	expression tag	UNP E3JD18
G	-4	PRO	-	expression tag	UNP E3JD18
G	-3	ARG	-	expression tag	UNP E3JD18
G	-2	GLY	-	expression tag	UNP E3JD18
G	-1	SER	-	expression tag	UNP E3JD18

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Chain	Residue	Modelled	Actual	Comment	Reference
G	0	HIS	-	expression tag	UNP E3JD18
H	-19	MET	-	initiating methionine	UNP E3JD18
H	-18	GLY	-	expression tag	UNP E3JD18
H	-17	SER	-	expression tag	UNP E3JD18
H	-16	SER	-	expression tag	UNP E3JD18
H	-15	HIS	-	expression tag	UNP E3JD18
H	-14	HIS	-	expression tag	UNP E3JD18
H	-13	HIS	-	expression tag	UNP E3JD18
H	-12	HIS	-	expression tag	UNP E3JD18
H	-11	HIS	-	expression tag	UNP E3JD18
H	-10	HIS	-	expression tag	UNP E3JD18
H	-9	SER	-	expression tag	UNP E3JD18
H	-8	SER	-	expression tag	UNP E3JD18
H	-7	GLY	-	expression tag	UNP E3JD18
H	-6	LEU	-	expression tag	UNP E3JD18
H	-5	VAL	-	expression tag	UNP E3JD18
H	-4	PRO	-	expression tag	UNP E3JD18
H	-3	ARG	-	expression tag	UNP E3JD18
H	-2	GLY	-	expression tag	UNP E3JD18
H	-1	SER	-	expression tag	UNP E3JD18
H	0	HIS	-	expression tag	UNP E3JD18

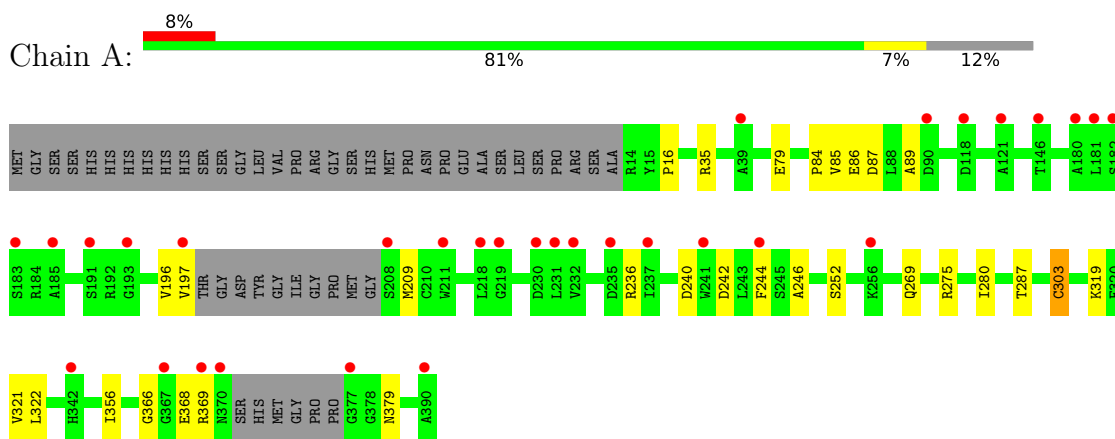
- Molecule 2 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	50	Total O 50 50	0	0
2	B	27	Total O 27 27	0	0
2	C	25	Total O 25 25	0	0
2	D	21	Total O 21 21	0	0
2	E	53	Total O 53 53	0	0
2	F	37	Total O 37 37	0	0
2	G	11	Total O 11 11	0	0
2	H	32	Total O 32 32	0	0

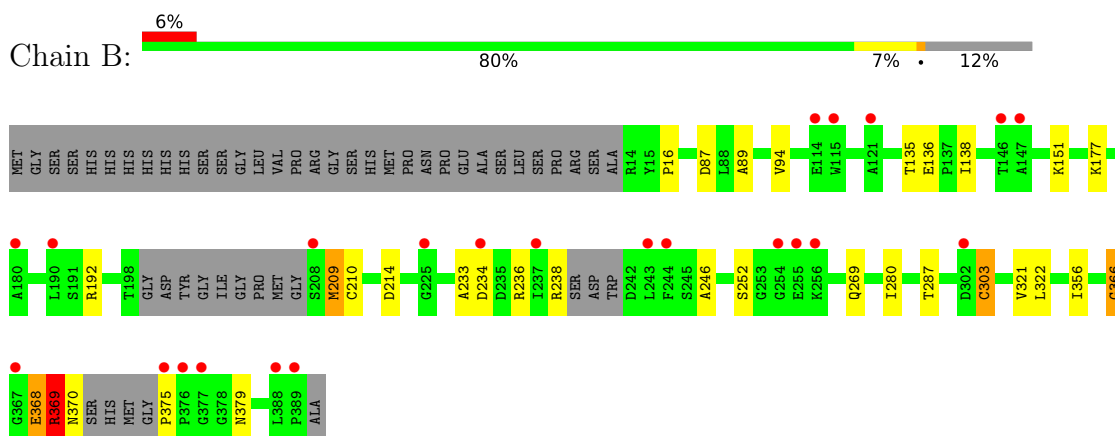
### 3 Residue-property plots [i](#)

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.

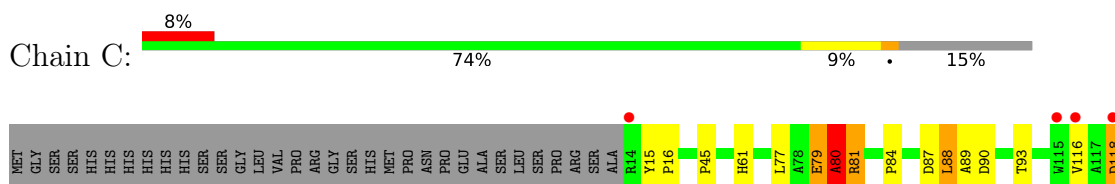
- Molecule 1: Ring-opening amidohydrolase

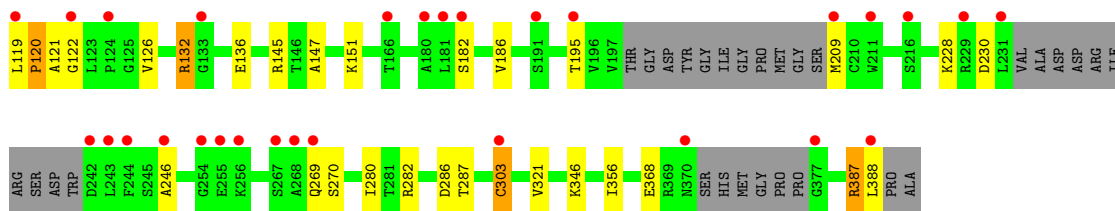


- Molecule 1: Ring-opening amidohydrolase

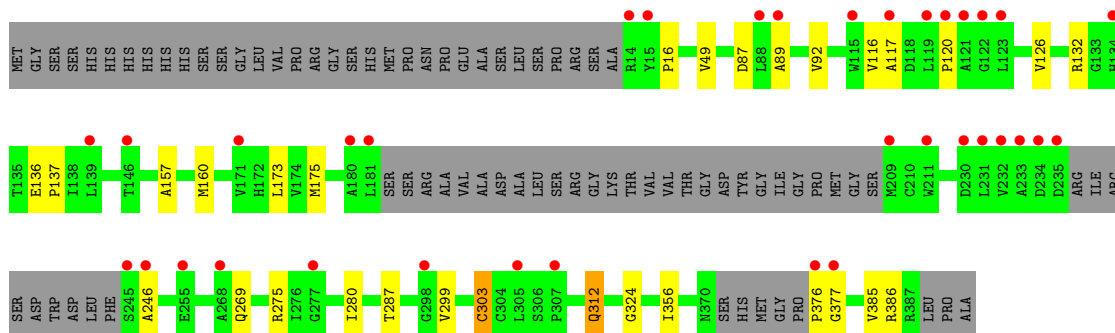
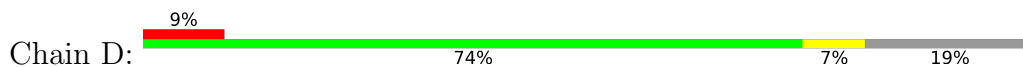


- Molecule 1: Ring-opening amidohydrolase

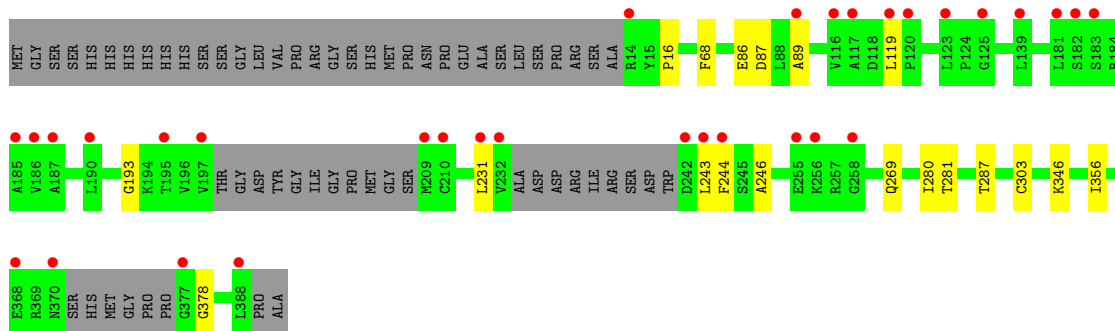
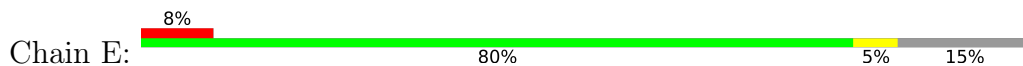




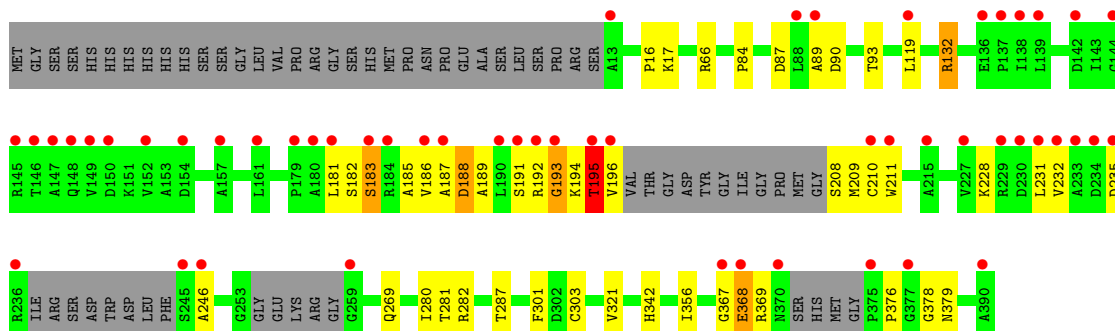
● Molecule 1: Ring-opening amidohydrolase



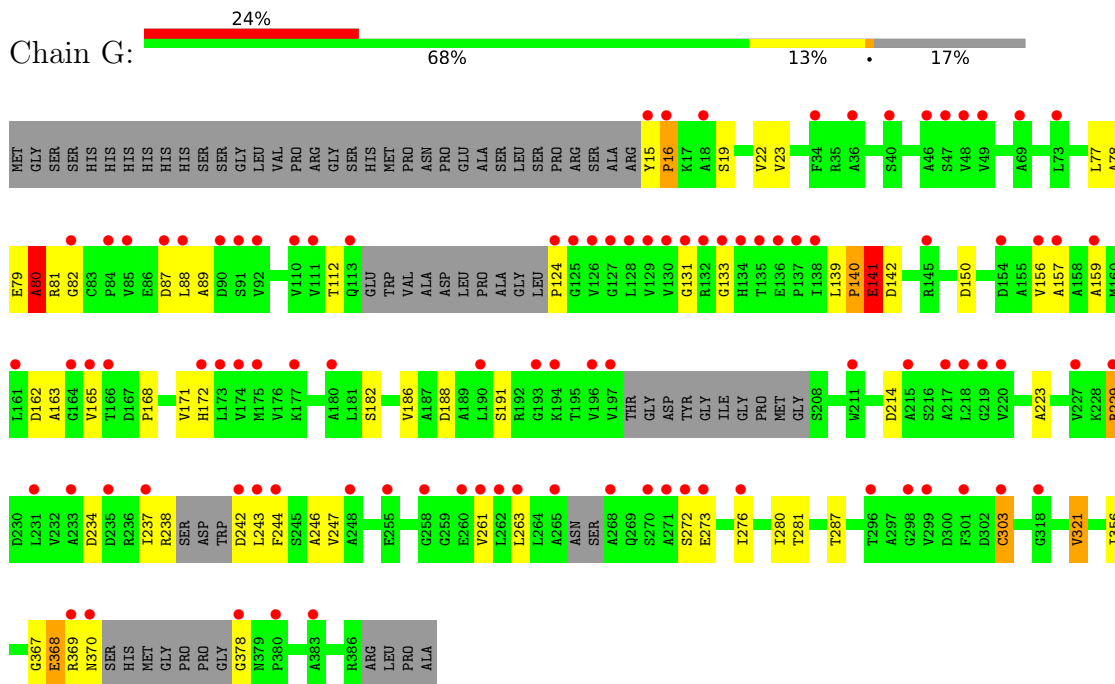
● Molecule 1: Ring-opening amidohydrolase



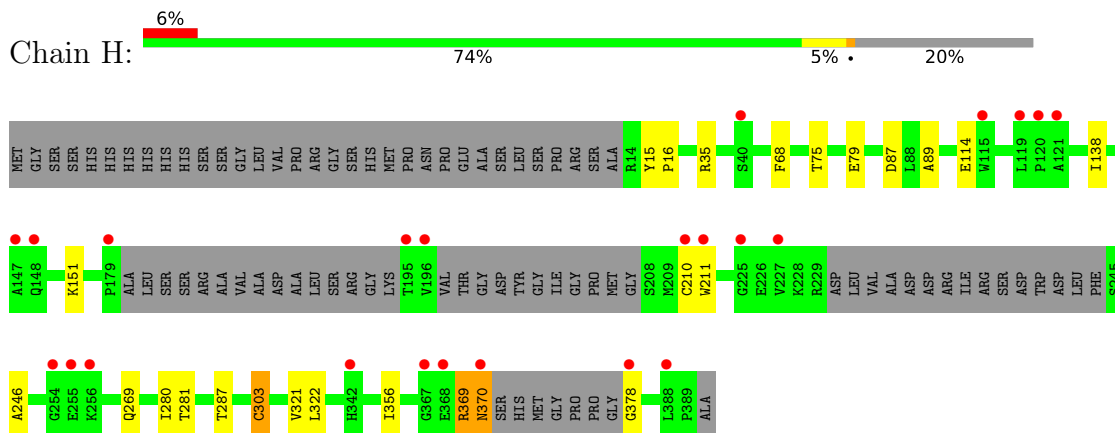
● Molecule 1: Ring-opening amidohydrolase



- Molecule 1: Ring-opening amidohydrolase



- Molecule 1: Ring-opening amidohydrolase



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	92.76Å 105.80Å 299.13Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	46.70 – 2.56 46.70 – 2.56	Depositor EDS
% Data completeness (in resolution range)	99.4 (46.70-2.56) 99.4 (46.70-2.56)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.90 (at 2.54Å)	Xtrriage
Refinement program	REFMAC 5.8.0135	Depositor
R, $R_{free}$	0.229 , 0.263 0.232 , 0.263	Depositor DCC
$R_{free}$ test set	4666 reflections (4.88%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	44.4	Xtrriage
Anisotropy	0.016	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.29 , 33.8	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.49$ , $\langle L^2 \rangle = 0.33$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.93	EDS
Total number of atoms	19841	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	55.0	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 22.83 % 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 5.2675e-03. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical 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	0.93	1/2604 (0.0%)	0.95	0/3550
1	B	0.95	2/2627 (0.1%)	0.97	2/3578 (0.1%)
1	C	0.97	3/2466 (0.1%)	1.00	5/3366 (0.1%)
1	D	0.90	0/2385	0.97	1/3254 (0.0%)
1	E	0.91	0/2517	0.96	2/3429 (0.1%)
1	F	0.97	1/2500 (0.0%)	0.95	2/3413 (0.1%)
1	G	1.00	3/2402 (0.1%)	1.03	2/3273 (0.1%)
1	H	0.92	0/2377	0.92	0/3239
All	All	0.94	10/19878 (0.1%)	0.97	14/27102 (0.1%)

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	2
1	C	0	8
1	D	0	4
1	F	0	4
1	G	0	4
All	All	0	22

All (10) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	80	ALA	CA-C	6.37	1.61	1.52
1	C	81	ARG	C-O	-6.21	1.15	1.24
1	A	366	GLY	C-O	-6.03	1.20	1.24
1	G	77	LEU	C-O	-5.87	1.17	1.24
1	F	209	MET	C-O	-5.62	1.17	1.24
1	G	133	GLY	N-CA	5.51	1.50	1.45
1	B	366	GLY	C-O	-5.46	1.16	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	80	ALA	C-N	5.29	1.41	1.33
1	B	209	MET	C-O	-5.08	1.18	1.24
1	G	321	VAL	CA-CB	5.01	1.59	1.54

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	80	ALA	N-CA-C	-8.84	103.62	114.75
1	C	79	GLU	CB-CA-C	-8.24	98.18	110.95
1	G	79	GLU	CB-CA-C	7.07	125.70	110.21
1	F	119	LEU	CA-C-N	-6.42	113.35	119.90
1	F	119	LEU	C-N-CA	-6.42	113.35	119.90
1	C	79	GLU	N-CA-C	5.85	117.52	111.03
1	E	119	LEU	CA-C-N	-5.67	113.94	119.78
1	E	119	LEU	C-N-CA	-5.67	113.94	119.78
1	C	80	ALA	N-CA-C	5.63	122.79	110.80
1	C	119	LEU	CA-C-N	-5.34	113.16	119.84
1	C	119	LEU	C-N-CA	-5.34	113.16	119.84
1	B	375	PRO	CA-C-N	-5.18	114.23	119.83
1	B	375	PRO	C-N-CA	-5.18	114.23	119.83
1	D	312	GLN	CB-CA-C	5.05	120.88	110.31

There are no chirality outliers.

All (22) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	B	366	GLY	Peptide
1	B	369	ARG	Peptide
1	C	118	ASP	Peptide
1	C	120	PRO	Peptide
1	C	121	ALA	Peptide
1	C	122	GLY	Peptide
1	C	387	ARG	Peptide
1	C	79	GLU	Peptide
1	C	80	ALA	Mainchain
1	C	88	LEU	Peptide
1	D	116	VAL	Peptide
1	D	117	ALA	Peptide
1	D	120	PRO	Peptide
1	D	377	GLY	Peptide
1	F	193	GLY	Peptide
1	F	195	THR	Peptide

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Mol	Chain	Res	Type	Group
1	F	368	GLU	Peptide
1	F	369	ARG	Peptide
1	G	124	PRO	Peptide
1	G	140	PRO	Peptide
1	G	242	ASP	Peptide
1	G	80	ALA	Peptide

## 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	2565	0	2528	16	0
1	B	2586	0	2575	23	1
1	C	2430	0	2359	29	0
1	D	2349	0	2306	19	0
1	E	2482	0	2451	10	1
1	F	2461	0	2414	40	0
1	G	2371	0	2318	47	0
1	H	2341	0	2317	21	0
2	A	50	0	0	1	0
2	B	27	0	0	0	0
2	C	25	0	0	1	0
2	D	21	0	0	0	0
2	E	53	0	0	1	0
2	F	37	0	0	2	0
2	G	11	0	0	0	0
2	H	32	0	0	0	0
All	All	19841	0	19268	200	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 5.

All (200) 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:35[B]:ARG:NH2	1:H:79[B]:GLU:OE1	1.62	1.31

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:172:HIS:O	1:G:247:VAL:HG13	1.43	1.15
1:G:150:ASP:OD1	1:G:229:ARG:NH1	1.82	1.12
1:C:87:ASP:O	1:C:89:ALA:N	1.97	0.97
1:H:35[B]:ARG:HH21	1:H:79[B]:GLU:CD	1.73	0.96
1:C:90:ASP:O	1:C:132:ARG:NH2	2.05	0.89
1:H:35[B]:ARG:NH2	1:H:79[B]:GLU:CD	2.28	0.89
1:C:87:ASP:C	1:C:89:ALA:H	1.80	0.86
1:H:210:CYS:HG	1:H:211:TRP:CD1	1.96	0.84
1:B:322:LEU:HD12	1:B:369:ARG:HD2	1.59	0.84
1:G:172:HIS:C	1:G:247:VAL:HG13	2.07	0.79
1:D:173:LEU:HD21	1:D:175:MET:HG3	1.67	0.77
1:F:183:SER:O	1:F:186:VAL:HG12	1.86	0.76
1:H:321:VAL:HG11	1:H:370:ASN:HB2	1.67	0.75
1:C:87:ASP:C	1:C:89:ALA:N	2.39	0.75
1:G:168:PRO:O	1:G:171:VAL:HG12	1.87	0.75
1:F:93:THR:OG1	1:F:132:ARG:NH1	2.21	0.74
1:F:193:GLY:HA2	1:F:194:LYS:CB	2.18	0.74
1:B:214:ASP:OD2	1:B:238:ARG:NH1	2.20	0.73
1:G:19:SER:OG	1:G:112:THR:OG1	2.06	0.73
1:G:172:HIS:CD2	1:G:276:ILE:HG23	2.24	0.72
1:F:181:LEU:HB2	1:F:208:SER:HB2	1.73	0.71
1:C:93:THR:OG1	1:C:132:ARG:NH1	2.23	0.70
1:G:150:ASP:CG	1:G:229:ARG:HH12	2.01	0.69
1:G:156:VAL:HG23	1:G:223:ALA:CB	2.23	0.69
1:F:188:ASP:O	1:F:192:ARG:HG3	1.93	0.68
1:G:156:VAL:CG2	1:G:223:ALA:CB	2.72	0.67
1:C:136:GLU:HB2	1:C:151:LYS:HD3	1.77	0.67
1:B:94:VAL:O	1:B:177:LYS:NZ	2.28	0.66
1:B:209:MET:HE2	1:B:252:SER:O	1.97	0.65
1:B:368:GLU:C	1:B:369:ARG:HD3	2.22	0.65
1:C:388:LEU:HD23	1:C:388:LEU:O	1.97	0.65
1:A:236:ARG:NH2	1:A:240:ASP:OD2	2.29	0.64
1:H:322:LEU:HD12	1:H:369:ARG:HG3	1.77	0.64
1:C:182:SER:O	1:C:186:VAL:HG23	1.98	0.64
1:G:156:VAL:HG21	1:G:223:ALA:HB3	1.78	0.64
1:C:282:ARG:HD3	1:C:286:ASP:OD2	1.99	0.62
1:C:321:VAL:HG22	1:C:368:GLU:HG2	1.82	0.62
1:F:192:ARG:NH1	2:F:401:HOH:O	2.27	0.61
1:F:189:ALA:O	1:F:194:LYS:CB	2.49	0.61
1:F:84:PRO:HD2	1:F:87:ASP:OD2	2.01	0.61
1:G:172:HIS:C	1:G:247:VAL:CG1	2.73	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:189:ALA:O	1:F:193:GLY:N	2.34	0.60
1:G:229:ARG:O	1:G:229:ARG:HD2	2.02	0.60
1:G:171:VAL:HG23	1:G:263:LEU:HD21	1.84	0.60
1:G:22:VAL:C	1:G:23:VAL:HG23	2.26	0.60
1:A:322:LEU:HD12	1:A:369:ARG:HG2	1.83	0.59
1:A:84:PRO:HD2	1:A:87:ASP:OD2	2.01	0.59
1:B:369:ARG:HB2	1:B:369:ARG:HH11	1.68	0.59
1:G:156:VAL:CG2	1:G:223:ALA:HB3	2.32	0.58
1:B:87:ASP:C	1:B:89:ALA:H	2.11	0.58
1:G:150:ASP:CG	1:G:229:ARG:NH1	2.59	0.58
1:G:172:HIS:O	1:G:247:VAL:CG1	2.36	0.58
1:G:87:ASP:C	1:G:89:ALA:H	2.12	0.58
1:C:145:ARG:NH2	1:C:195:THR:O	2.37	0.57
1:D:87:ASP:C	1:D:89:ALA:H	2.13	0.57
1:A:303:CYS:HB3	1:C:303:CYS:SG	2.45	0.56
1:G:214:ASP:OD2	1:G:238:ARG:HG2	2.04	0.56
1:H:210:CYS:SG	1:H:211:TRP:CD1	2.98	0.56
1:C:387:ARG:N	1:C:388:LEU:HA	2.20	0.56
1:G:139:LEU:HB3	1:G:141:GLU:HG3	1.87	0.56
1:A:287:THR:HB	1:A:356:ILE:HD11	1.87	0.56
1:B:322:LEU:O	1:B:370:ASN:HB2	2.06	0.56
1:F:182:SER:O	1:F:185:ALA:HB3	2.06	0.56
1:A:35[B]:ARG:NH2	1:A:79:GLU:OE2	2.38	0.55
1:G:287:THR:HB	1:G:356:ILE:HD11	1.89	0.55
1:F:87:ASP:C	1:F:89:ALA:H	2.13	0.55
1:F:193:GLY:CA	1:F:194:LYS:CB	2.85	0.55
1:A:87:ASP:C	1:A:89:ALA:H	2.15	0.55
1:C:287:THR:HB	1:C:356:ILE:HD11	1.89	0.55
1:E:87:ASP:C	1:E:89:ALA:H	2.14	0.55
1:D:287:THR:HB	1:D:356:ILE:HD11	1.89	0.54
1:G:246:ALA:HB1	1:G:280:ILE:HD11	1.89	0.54
1:D:312:GLN:O	1:D:385:VAL:HG13	2.08	0.54
1:B:287:THR:HB	1:B:356:ILE:HD11	1.89	0.54
1:F:287:THR:HB	1:F:356:ILE:HD11	1.89	0.54
1:H:287:THR:HB	1:H:356:ILE:HD11	1.89	0.54
1:F:228:LYS:HB2	1:F:231:LEU:HD13	1.90	0.53
1:G:321:VAL:HG13	1:G:369:ARG:HA	1.90	0.53
1:C:246:ALA:HB1	1:C:280:ILE:HD11	1.91	0.53
1:E:287:THR:HB	1:E:356:ILE:HD11	1.89	0.53
1:H:87:ASP:C	1:H:89:ALA:H	2.14	0.53
1:C:77:LEU:O	1:C:81:ARG:HG3	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:321:VAL:HG22	1:B:379:ASN:OD1	2.09	0.52
1:E:246:ALA:HB1	1:E:280:ILE:HD11	1.91	0.52
1:G:87:ASP:O	1:G:89:ALA:N	2.42	0.52
1:F:182:SER:HB2	1:F:185:ALA:HB2	1.92	0.52
1:G:188:ASP:O	1:G:191:SER:HB3	2.10	0.51
1:F:194:LYS:O	1:F:195:THR:HG22	2.10	0.51
1:A:246:ALA:HB1	1:A:280:ILE:HD11	1.93	0.51
1:D:49:VAL:HG22	1:D:132:ARG:HD2	1.92	0.51
1:E:86:GLU:OE1	1:E:86:GLU:N	2.36	0.51
1:C:147:ALA:O	1:C:151:LYS:HG3	2.10	0.51
1:G:78:ALA:O	1:G:82:GLY:N	2.43	0.51
1:G:22:VAL:C	1:G:23:VAL:CG2	2.83	0.51
1:A:196:VAL:HG12	1:A:197:VAL:N	2.26	0.50
1:B:369:ARG:HH11	1:B:369:ARG:N	2.08	0.50
1:G:78:ALA:C	1:G:80:ALA:H	2.19	0.50
1:H:369:ARG:O	1:H:370:ASN:ND2	2.44	0.50
1:C:61:HIS:HB2	1:C:209:MET:HE1	1.94	0.50
1:D:385:VAL:HG12	1:D:386:ARG:N	2.27	0.50
1:H:75:THR:O	1:H:79[B]:GLU:HG3	2.12	0.50
1:C:84:PRO:HD2	1:C:87:ASP:OD2	2.10	0.50
1:C:126:VAL:O	1:C:387:ARG:HD2	2.12	0.50
1:F:90:ASP:O	1:F:132:ARG:NH2	2.45	0.50
1:B:246:ALA:HB1	1:B:280:ILE:HD11	1.94	0.50
1:D:157:ALA:HA	1:D:160:MET:HE2	1.93	0.50
1:D:246:ALA:HB1	1:D:280:ILE:HD11	1.94	0.50
1:F:246:ALA:HB1	1:F:280:ILE:HD11	1.94	0.49
1:G:171:VAL:HG21	1:G:263:LEU:HD11	1.93	0.49
1:B:135:THR:CG2	1:B:151:LYS:HB3	2.41	0.49
1:H:246:ALA:HB1	1:H:280:ILE:HD11	1.94	0.49
1:G:303:CYS:SG	1:H:303:CYS:HB3	2.52	0.49
1:B:135:THR:HG22	1:B:136:GLU:O	2.12	0.49
1:C:346:LYS:NZ	2:C:402:HOH:O	2.45	0.49
1:B:369:ARG:HB2	1:B:369:ARG:NH1	2.29	0.48
1:C:270:SER:O	1:C:387:ARG:NH2	2.46	0.48
1:G:156:VAL:HG12	1:G:261:VAL:HG11	1.94	0.48
1:G:156:VAL:HG23	1:G:223:ALA:HB1	1.94	0.48
1:A:319:LYS:NZ	1:A:368:GLU:OE2	2.23	0.48
1:F:195:THR:C	1:F:196:VAL:HG23	2.39	0.48
1:A:275:ARG:NH1	2:A:403:HOH:O	2.33	0.47
1:E:243:LEU:O	1:E:244:PHE:HD2	1.97	0.47
1:C:228:LYS:O	1:C:230:ASP:N	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:385:VAL:HG12	1:D:386:ARG:H	1.78	0.47
1:F:342[B]:HIS:CG	1:F:367:GLY:O	2.68	0.47
1:G:367:GLY:O	1:G:368:GLU:O	2.33	0.47
1:F:342[B]:HIS:CD2	1:F:367:GLY:O	2.67	0.47
1:F:194:LYS:C	1:F:195:THR:HG22	2.39	0.47
1:D:49:VAL:HG22	1:D:132:ARG:CD	2.45	0.47
1:B:192:ARG:HA	1:F:301:PHE:O	2.15	0.46
1:F:188:ASP:O	1:F:191:SER:N	2.48	0.46
1:E:243:LEU:O	1:E:244:PHE:CD2	2.69	0.46
1:G:229:ARG:HD2	1:G:229:ARG:C	2.40	0.46
1:C:90:ASP:OD1	1:C:90:ASP:N	2.47	0.46
1:C:118:ASP:O	1:C:120:PRO:HD3	2.16	0.46
1:F:321:VAL:HG22	1:F:379:ASN:OD1	2.16	0.46
1:D:324:GLY:HA3	1:D:376:PRO:N	2.32	0.45
1:C:15:TYR:O	1:C:116:VAL:N	2.45	0.45
1:G:163:ALA:O	1:G:165:VAL:HG23	2.17	0.45
1:B:369:ARG:HH11	1:B:369:ARG:CB	2.29	0.45
1:G:131:GLY:HA2	1:G:162:ASP:OD2	2.17	0.45
1:F:16:PRO:HD2	1:F:269:GLN:O	2.16	0.45
1:A:321:VAL:HG22	1:A:379:ASN:OD1	2.17	0.44
1:G:370:ASN:HD22	1:G:370:ASN:HA	1.65	0.44
1:C:282:ARG:HD3	1:C:286:ASP:CG	2.43	0.44
1:E:346:LYS:NZ	2:E:401:HOH:O	2.44	0.44
1:H:281:THR:O	1:H:378:GLY:HA2	2.18	0.44
1:H:369:ARG:H	1:H:369:ARG:HE	1.64	0.44
1:F:188:ASP:O	1:F:191:SER:HB2	2.17	0.44
1:G:281:THR:O	1:G:378:GLY:HA2	2.18	0.44
1:G:157:ALA:C	1:G:159:ALA:H	2.26	0.43
1:G:234:ASP:O	1:G:237:ILE:HG22	2.18	0.43
1:H:138:ILE:CD1	1:H:151:LYS:HD3	2.47	0.43
1:B:233:ALA:HB3	1:B:236:ARG:HG2	2.00	0.43
1:C:16:PRO:HD2	1:C:269:GLN:O	2.18	0.43
1:F:87:ASP:C	1:F:89:ALA:N	2.77	0.43
1:G:243:LEU:C	1:G:244:PHE:CD2	2.96	0.43
1:D:299:VAL:CG2	1:D:385:VAL:HG11	2.48	0.43
1:F:232:VAL:O	1:F:232:VAL:HG12	2.18	0.43
1:F:342[B]:HIS:CE1	1:F:367:GLY:O	2.71	0.43
1:D:126:VAL:H	1:D:275:ARG:HH21	1.67	0.43
1:H:15:TYR:N	1:H:15:TYR:CD1	2.85	0.43
1:A:16:PRO:HD2	1:A:269:GLN:O	2.19	0.43
1:F:188:ASP:HA	1:F:191:SER:HB2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:322:LEU:HD12	1:H:369:ARG:CG	2.47	0.43
1:H:35[B]:ARG:NH2	1:H:79[B]:GLU:OE2	2.51	0.43
1:D:16:PRO:HD2	1:D:269:GLN:O	2.19	0.42
1:F:66:ARG:NH1	2:F:406:HOH:O	2.52	0.42
1:G:139:LEU:O	1:G:142:ASP:HB2	2.19	0.42
1:G:139:LEU:CB	1:G:141:GLU:HG3	2.48	0.42
1:A:85:VAL:HG12	1:A:86:GLU:OE2	2.20	0.42
1:A:209:MET:HG2	1:A:252:SER:OG	2.19	0.42
1:D:87:ASP:C	1:D:89:ALA:N	2.77	0.42
1:F:194:LYS:O	1:F:195:THR:CB	2.67	0.42
1:F:17:LYS:O	1:F:17:LYS:HG3	2.20	0.41
1:B:135:THR:HG21	1:B:138:ILE:HD11	2.02	0.41
1:F:189:ALA:O	1:F:194:LYS:CA	2.68	0.41
1:G:182:SER:O	1:G:186:VAL:HG23	2.19	0.41
1:E:16:PRO:HD2	1:E:269:GLN:O	2.21	0.41
1:H:16:PRO:HD2	1:H:269:GLN:O	2.20	0.41
1:G:139:LEU:HA	1:G:140:PRO:HD3	1.82	0.41
1:G:247:VAL:O	1:G:247:VAL:HG12	2.20	0.41
1:A:240:ASP:OD1	1:A:242:ASP:HB2	2.21	0.41
1:D:49:VAL:CG2	1:D:132:ARG:HD3	2.50	0.41
1:F:210:CYS:SG	1:F:211:TRP:CE3	3.10	0.41
1:D:136:GLU:O	1:D:137:PRO:C	2.63	0.41
1:E:281:THR:O	1:E:378:GLY:HA2	2.21	0.41
1:F:189:ALA:HB1	1:F:194:LYS:HA	2.02	0.41
1:D:312:GLN:HG2	1:D:385:VAL:HG12	2.03	0.41
1:F:210:CYS:SG	1:F:211:TRP:HE3	2.43	0.41
1:B:210:CYS:HB2	1:B:238:ARG:NH2	2.36	0.40
1:E:68:PHE:CD1	1:H:68:PHE:CD1	3.09	0.40
1:B:16:PRO:HD2	1:B:269:GLN:O	2.20	0.40
1:B:87:ASP:C	1:B:89:ALA:N	2.75	0.40
1:B:303:CYS:HB3	1:D:303:CYS:SG	2.61	0.40
1:F:281:THR:O	1:F:378:GLY:HA2	2.22	0.40
1:G:15:TYR:CB	1:G:16:PRO:CD	3.00	0.40
1:C:45:PRO:HB2	1:C:81:ARG:HG2	2.04	0.40
1:F:186:VAL:HG13	1:F:187:ALA:N	2.36	0.40

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:B:234:ASP:OD1	1:E:193:GLY:O[4_445]	2.13	0.07

## 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	356/410 (87%)	343 (96%)	13 (4%)	0	100	100
1	B	354/410 (86%)	343 (97%)	10 (3%)	1 (0%)	36	44
1	C	342/410 (83%)	322 (94%)	18 (5%)	2 (1%)	21	28
1	D	327/410 (80%)	316 (97%)	11 (3%)	0	100	100
1	E	344/410 (84%)	335 (97%)	9 (3%)	0	100	100
1	F	341/410 (83%)	324 (95%)	13 (4%)	4 (1%)	10	14
1	G	329/410 (80%)	310 (94%)	15 (5%)	4 (1%)	10	14
1	H	320/410 (78%)	312 (98%)	8 (2%)	0	100	100
All	All	2713/3280 (83%)	2605 (96%)	97 (4%)	11 (0%)	30	39

All (11) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	80	ALA
1	C	88	LEU
1	G	141	GLU
1	G	368	GLU
1	B	368	GLU
1	F	195	THR
1	F	183	SER
1	G	88	LEU
1	F	368	GLU
1	G	16	PRO
1	F	376	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	263/310 (85%)	261 (99%)	2 (1%)	73	82
1	B	268/310 (86%)	266 (99%)	2 (1%)	76	84
1	C	241/310 (78%)	239 (99%)	2 (1%)	73	82
1	D	240/310 (77%)	238 (99%)	2 (1%)	73	82
1	E	254/310 (82%)	252 (99%)	2 (1%)	73	82
1	F	252/310 (81%)	247 (98%)	5 (2%)	48	64
1	G	241/310 (78%)	235 (98%)	6 (2%)	42	58
1	H	242/310 (78%)	238 (98%)	4 (2%)	53	68
All	All	2001/2480 (81%)	1976 (99%)	25 (1%)	61	76

All (25) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	244	PHE
1	A	303	CYS
1	B	303	CYS
1	B	369	ARG
1	C	132	ARG
1	C	303	CYS
1	D	92	VAL
1	D	303	CYS
1	E	231	LEU
1	E	303	CYS
1	F	132	ARG
1	F	188	ASP
1	F	235	ASP
1	F	282	ARG
1	F	303	CYS
1	G	81	ARG
1	G	141	GLU
1	G	229	ARG
1	G	272	SER
1	G	273	GLU
1	G	303	CYS
1	H	114	GLU
1	H	303	CYS
1	H	369	ARG
1	H	370	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (12) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	213	ASN
1	C	61	HIS
1	C	134	HIS
1	D	61	HIS
1	D	312	GLN
1	D	339	HIS
1	E	61	HIS
1	E	339	HIS
1	F	339	HIS
1	G	61	HIS
1	G	370	ASN
1	H	370	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, 95<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	361/410 (88%)	0.32	31 (8%) 16 16	19, 41, 99, 140	1 (0%)
1	B	360/410 (87%)	0.44	23 (6%) 25 25	14, 47, 86, 130	2 (0%)
1	C	348/410 (84%)	0.66	33 (9%) 14 14	15, 57, 107, 144	2 (0%)
1	D	333/410 (81%)	0.72	35 (10%) 11 11	16, 58, 106, 134	2 (0%)
1	E	349/410 (85%)	0.26	32 (9%) 14 14	12, 42, 105, 137	3 (0%)
1	F	350/410 (85%)	0.73	54 (15%) 5 4	13, 48, 99, 122	1 (0%)
1	G	340/410 (82%)	1.42	98 (28%) 1 1	15, 70, 111, 138	1 (0%)
1	H	328/410 (80%)	0.51	23 (7%) 22 22	21, 49, 95, 139	2 (0%)
All	All	2769/3280 (84%)	0.63	329 (11%) 9 8	12, 51, 104, 144	14 (0%)

All (329) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	G	133	GLY	6.4
1	C	388	LEU	5.8
1	G	132	ARG	5.5
1	G	15	TYR	5.4
1	H	367	GLY	5.2
1	F	146	THR	4.9
1	G	134	HIS	4.9
1	G	265	ALA	4.8
1	A	241	TRP	4.8
1	F	142	ASP	4.6
1	D	119	LEU	4.6
1	E	388	LEU	4.6
1	D	376	PRO	4.5
1	F	179	PRO	4.5
1	G	127	GLY	4.4
1	F	138	ILE	4.4

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	G	131	GLY	4.3
1	C	242	ASP	4.3
1	A	197	VAL	4.3
1	G	218	LEU	4.3
1	F	187	ALA	4.2
1	F	211	TRP	4.2
1	G	16	PRO	4.2
1	F	233	ALA	4.2
1	F	370	ASN	4.1
1	G	268	ALA	4.1
1	F	139	LEU	4.1
1	D	211	TRP	4.1
1	E	244	PHE	4.1
1	D	115	TRP	4.1
1	G	85	VAL	4.0
1	C	244	PHE	4.0
1	E	209	MET	4.0
1	B	367	GLY	3.9
1	G	227	VAL	3.9
1	F	191	SER	3.9
1	A	237	ILE	3.8
1	E	377	GLY	3.8
1	F	196	VAL	3.8
1	G	129	VAL	3.8
1	B	243	LEU	3.8
1	B	375	PRO	3.7
1	B	208	SER	3.7
1	G	126	VAL	3.7
1	A	191	SER	3.7
1	C	182	SER	3.7
1	E	197	VAL	3.7
1	D	209	MET	3.7
1	G	165	VAL	3.7
1	F	245	SER	3.6
1	G	157	ALA	3.6
1	E	231	LEU	3.6
1	G	219	GLY	3.6
1	C	124	PRO	3.6
1	D	233	ALA	3.5
1	A	208	SER	3.5
1	G	161	LEU	3.5
1	A	367	GLY	3.5

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	G	87	ASP	3.5
1	F	181	LEU	3.5
1	G	124	PRO	3.5
1	F	367	GLY	3.5
1	E	242	ASP	3.4
1	F	152	VAL	3.4
1	A	244	PHE	3.4
1	F	149	VAL	3.4
1	C	246	ALA	3.4
1	G	248	ALA	3.4
1	F	145	ARG	3.4
1	D	123	LEU	3.4
1	C	370	ASN	3.3
1	F	161	LEU	3.3
1	G	84	PRO	3.3
1	B	376	PRO	3.3
1	B	244	PHE	3.3
1	G	91	SER	3.3
1	G	244	PHE	3.3
1	H	227	VAL	3.3
1	G	138	ILE	3.3
1	D	180	ALA	3.3
1	G	370	ASN	3.2
1	E	119	LEU	3.2
1	E	181	LEU	3.2
1	G	92	VAL	3.2
1	D	89	ALA	3.2
1	G	235	ASP	3.2
1	D	181	LEU	3.2
1	G	211	TRP	3.2
1	H	115	TRP	3.2
1	C	166	THR	3.2
1	G	136	GLU	3.1
1	F	231	LEU	3.1
1	H	342	HIS	3.1
1	C	377	GLY	3.1
1	G	378	GLY	3.1
1	D	88	LEU	3.1
1	G	88	LEU	3.1
1	G	242	ASP	3.1
1	F	227	VAL	3.1
1	F	215	ALA	3.1

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	G	137	PRO	3.1
1	G	128	LEU	3.1
1	C	14	ARG	3.1
1	D	14	ARG	3.1
1	G	243	LEU	3.0
1	B	115	TRP	3.0
1	D	255	GLU	3.0
1	G	172	HIS	3.0
1	F	235	ASP	3.0
1	D	232	VAL	3.0
1	G	369	ARG	3.0
1	A	377	GLY	3.0
1	D	121	ALA	3.0
1	F	377	GLY	3.0
1	F	368	GLU	2.9
1	A	39	ALA	2.9
1	D	245	SER	2.9
1	A	370	ASN	2.9
1	F	148	GLN	2.9
1	F	186	VAL	2.9
1	F	195	THR	2.9
1	H	196	VAL	2.9
1	B	146	THR	2.9
1	A	218	LEU	2.9
1	G	90	ASP	2.9
1	D	277	GLY	2.9
1	G	197	VAL	2.9
1	F	150	ASP	2.9
1	A	183	SER	2.8
1	G	272	SER	2.8
1	H	256	LYS	2.8
1	F	89	ALA	2.8
1	G	82	GLY	2.8
1	F	236	ARG	2.8
1	F	183	SER	2.8
1	D	120	PRO	2.8
1	B	147	ALA	2.8
1	H	121	ALA	2.8
1	F	375	PRO	2.8
1	G	49	VAL	2.8
1	E	255	GLU	2.8
1	C	115	TRP	2.7

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	D	15	TYR	2.7
1	G	47	SER	2.7
1	G	262	LEU	2.7
1	B	121	ALA	2.7
1	G	180	ALA	2.7
1	B	389	PRO	2.7
1	E	186	VAL	2.7
1	E	243	LEU	2.7
1	G	215	ALA	2.7
1	F	136	GLU	2.7
1	F	137	PRO	2.7
1	C	267	SER	2.7
1	G	174	VAL	2.7
1	C	231	LEU	2.7
1	F	190	LEU	2.7
1	C	119	LEU	2.7
1	D	139	LEU	2.7
1	G	166	THR	2.7
1	F	230	ASP	2.6
1	A	181	LEU	2.6
1	C	181	LEU	2.6
1	C	268	ALA	2.6
1	F	234	ASP	2.6
1	G	237	ILE	2.6
1	C	229	ARG	2.6
1	E	123	LEU	2.6
1	A	182	SER	2.6
1	F	390	ALA	2.6
1	C	256	LYS	2.6
1	E	256	LYS	2.6
1	C	133	GLY	2.6
1	G	273	GLU	2.6
1	G	130	VAL	2.6
1	C	269	GLN	2.6
1	C	180	ALA	2.6
1	E	14	ARG	2.6
1	D	231	LEU	2.6
1	G	196	VAL	2.6
1	H	179	PRO	2.5
1	H	255	GLU	2.5
1	E	232	VAL	2.5
1	G	48	VAL	2.5

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	H	148	GLN	2.5
1	D	268	ALA	2.5
1	G	159	ALA	2.5
1	G	233	ALA	2.5
1	G	175	MET	2.5
1	A	193	GLY	2.5
1	D	122	GLY	2.5
1	H	254	GLY	2.5
1	H	211	TRP	2.5
1	G	173	LEU	2.5
1	A	342	HIS	2.5
1	F	232	VAL	2.5
1	G	177	LYS	2.5
1	G	135	THR	2.5
1	G	270	SER	2.5
1	H	210	CYS	2.5
1	C	211	TRP	2.5
1	C	243	LEU	2.5
1	G	231	LEU	2.5
1	E	117	ALA	2.5
1	A	146	THR	2.5
1	F	193	GLY	2.5
1	H	378	GLY	2.5
1	G	301	PHE	2.5
1	D	134	HIS	2.5
1	F	229	ARG	2.5
1	B	225	GLY	2.4
1	B	377	GLY	2.4
1	F	144	GLY	2.4
1	A	118	ASP	2.4
1	D	235	ASP	2.4
1	F	13	ALA	2.4
1	B	255	GLU	2.4
1	F	210	CYS	2.4
1	G	164	GLY	2.4
1	G	303	CYS	2.4
1	G	111	VAL	2.4
1	G	261	VAL	2.4
1	A	232	VAL	2.4
1	C	116	VAL	2.4
1	F	147	ALA	2.4
1	F	180	ALA	2.4

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	C	195	THR	2.4
1	E	368	GLU	2.4
1	G	318	GLY	2.4
1	G	263	LEU	2.4
1	G	255	GLU	2.4
1	G	113	GLN	2.3
1	A	90	ASP	2.3
1	G	18	ALA	2.3
1	C	254	GLY	2.3
1	G	73	LEU	2.3
1	G	190	LEU	2.3
1	G	156	VAL	2.3
1	B	114	GLU	2.3
1	A	180	ALA	2.3
1	D	117	ALA	2.3
1	E	89	ALA	2.3
1	G	145	ARG	2.3
1	A	185	ALA	2.3
1	G	271	ALA	2.3
1	D	146	THR	2.3
1	C	122	GLY	2.3
1	C	191	SER	2.3
1	G	40	SER	2.3
1	C	209	MET	2.3
1	A	230	ASP	2.3
1	C	303	CYS	2.3
1	G	229	ARG	2.3
1	A	121	ALA	2.2
1	G	194	LYS	2.2
1	A	235	ASP	2.2
1	B	234	ASP	2.2
1	B	190	LEU	2.2
1	E	190	LEU	2.2
1	D	234	ASP	2.2
1	F	192	ARG	2.2
1	H	370	ASN	2.2
1	B	388	LEU	2.2
1	G	260	GLU	2.2
1	D	171	VAL	2.2
1	B	256	LYS	2.2
1	E	195	THR	2.2
1	A	219	GLY	2.2

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	A	231	LEU	2.2
1	B	254	GLY	2.2
1	C	216	SER	2.2
1	E	182	SER	2.2
1	B	302	ASP	2.2
1	D	230	ASP	2.2
1	E	116	VAL	2.1
1	G	110	VAL	2.1
1	D	246	ALA	2.1
1	G	383	ALA	2.1
1	F	259	GLY	2.1
1	A	369	ARG	2.1
1	C	255	GLU	2.1
1	G	380	PRO	2.1
1	G	34	PHE	2.1
1	D	305	LEU	2.1
1	E	125	GLY	2.1
1	E	139	LEU	2.1
1	H	119	LEU	2.1
1	H	368	GLU	2.1
1	G	154	ASP	2.1
1	H	120	PRO	2.1
1	B	180	ALA	2.1
1	E	185	ALA	2.1
1	G	46	ALA	2.1
1	G	217	ALA	2.1
1	F	88	LEU	2.1
1	H	195	THR	2.1
1	F	184	ARG	2.1
1	D	307	PRO	2.1
1	G	69	ALA	2.1
1	F	119	LEU	2.1
1	H	388	LEU	2.1
1	E	258	GLY	2.1
1	G	193	GLY	2.1
1	G	258	GLY	2.1
1	G	276	ILE	2.1
1	H	40	SER	2.1
1	E	120	PRO	2.1
1	E	210	CYS	2.1
1	G	299	VAL	2.0
1	A	390	ALA	2.0

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Mol	Chain	Res	Type	RSRZ
1	E	187	ALA	2.0
1	G	36	ALA	2.0
1	H	147	ALA	2.0
1	E	370	ASN	2.0
1	D	298	GLY	2.0
1	G	125	GLY	2.0
1	C	118	ASP	2.0
1	F	154	ASP	2.0
1	E	183	SER	2.0
1	G	220	VAL	2.0
1	F	157	ALA	2.0
1	F	246	ALA	2.0
1	A	256	LYS	2.0
1	D	377	GLY	2.0
1	G	298	GLY	2.0
1	H	225	GLY	2.0
1	B	237	ILE	2.0
1	G	296	THR	2.0
1	A	211	TRP	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.