



# Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 03:24 PM UTC

PDB ID : 4E2F / pdb\_00004e2f  
Title : Crystal Structure of E. coli Aspartate Transcarbamoylase K164E/E239K Mutant in an intermediate state  
Authors : Guo, W.; Kantrowitz, E.R.  
Deposited on : 2012-03-08  
Resolution : 2.80 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:

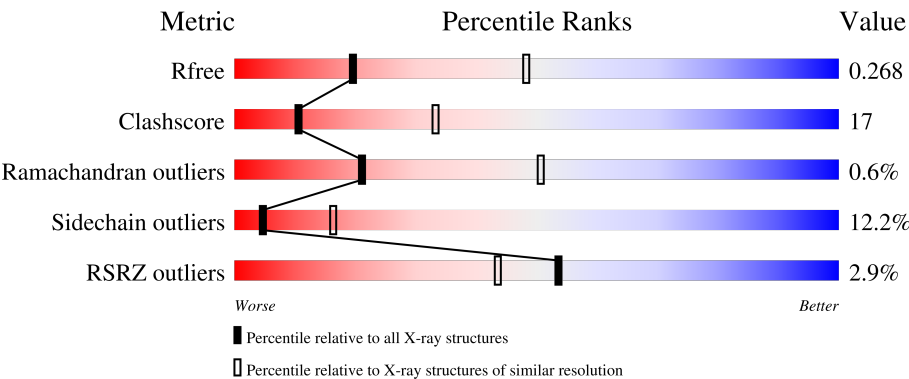
MolProbity	:	4-5-2 with Phenix2.0
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:  
*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.80 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 <sub>free</sub>	180053	3866 (2.80-2.80)
Clashscore	190562	4276 (2.80-2.80)
Ramachandran outliers	187476	4196 (2.80-2.80)
Sidechain outliers	187428	4198 (2.80-2.80)
RSRZ outliers	180081	3869 (2.80-2.80)

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	310	<div><div>3%</div><div>65%26%8%</div></div>
1	C	310	<div><div>3%</div><div>64%26%9%</div></div>
1	E	310	<div><div>4%</div><div>65%28%7%</div></div>
1	G	310	<div><div>4%</div><div>65%27%8%</div></div>
1	I	310	<div><div>7%</div><div>66%25%8%</div></div>

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Mol	Chain	Length	Quality of chain
1	K	310	<div><div><div></div><div></div><div></div></div><div>2%65%26%8%</div><div></div></div>
2	B	153	<div><div><div></div><div></div><div></div></div><div>%69%23%6%</div><div></div></div>
2	D	153	<div><div><div></div><div></div><div></div></div><div>%65%27%6%</div><div></div></div>
2	F	153	<div><div><div></div><div></div><div></div></div><div>69%24%6%</div><div></div></div>
2	H	153	<div><div><div></div><div></div><div></div></div><div>%69%20%5%6%</div><div></div></div>
2	J	153	<div><div><div></div><div></div><div></div></div><div>%65%25%6%</div><div></div></div>
2	L	153	<div><div><div></div><div></div><div></div></div><div>65%27%6%</div><div></div></div>

## 2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 21764 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 Aspartate carbamoyltransferase catalytic chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	I	310	Total	C	N	O	S	0	0	0
			2415	1527	423	456	9			
1	K	310	Total	C	N	O	S	0	0	0
			2415	1527	423	456	9			
1	G	310	Total	C	N	O	S	0	0	0
			2415	1527	423	456	9			
1	C	310	Total	C	N	O	S	0	0	0
			2415	1527	423	456	9			
1	A	310	Total	C	N	O	S	0	0	0
			2415	1527	423	456	9			
1	E	310	Total	C	N	O	S	0	0	0
			2415	1527	423	456	9			

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
I	164	GLU	LYS	engineered mutation	UNP P0A786
I	239	LYS	GLU	engineered mutation	UNP P0A786
K	164	GLU	LYS	engineered mutation	UNP P0A786
K	239	LYS	GLU	engineered mutation	UNP P0A786
G	164	GLU	LYS	engineered mutation	UNP P0A786
G	239	LYS	GLU	engineered mutation	UNP P0A786
C	164	GLU	LYS	engineered mutation	UNP P0A786
C	239	LYS	GLU	engineered mutation	UNP P0A786
A	164	GLU	LYS	engineered mutation	UNP P0A786
A	239	LYS	GLU	engineered mutation	UNP P0A786
E	164	GLU	LYS	engineered mutation	UNP P0A786
E	239	LYS	GLU	engineered mutation	UNP P0A786

- Molecule 2 is a protein called Aspartate carbamoyltransferase regulatory chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	D	144	Total 1127	C 707	N 199	O 216	S 5	0	0	0
2	B	144	Total 1127	C 707	N 199	O 216	S 5	0	0	0
2	J	144	Total 1127	C 707	N 199	O 216	S 5	0	0	0
2	L	144	Total 1127	C 707	N 199	O 216	S 5	0	0	0
2	H	144	Total 1127	C 707	N 199	O 216	S 5	0	0	0
2	F	144	Total 1127	C 707	N 199	O 216	S 5	0	0	0

- Molecule 3 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	D	1	Total 1	Zn 1	0	0
3	B	1	Total 1	Zn 1	0	0
3	J	1	Total 1	Zn 1	0	0
3	L	1	Total 1	Zn 1	0	0
3	H	1	Total 1	Zn 1	0	0
3	F	1	Total 1	Zn 1	0	0

- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	I	49	Total 49	O 49	0	0
4	K	44	Total 44	O 44	0	0
4	G	41	Total 41	O 41	0	0
4	C	52	Total 52	O 52	0	0
4	A	78	Total 78	O 78	0	0
4	D	32	Total 32	O 32	0	0

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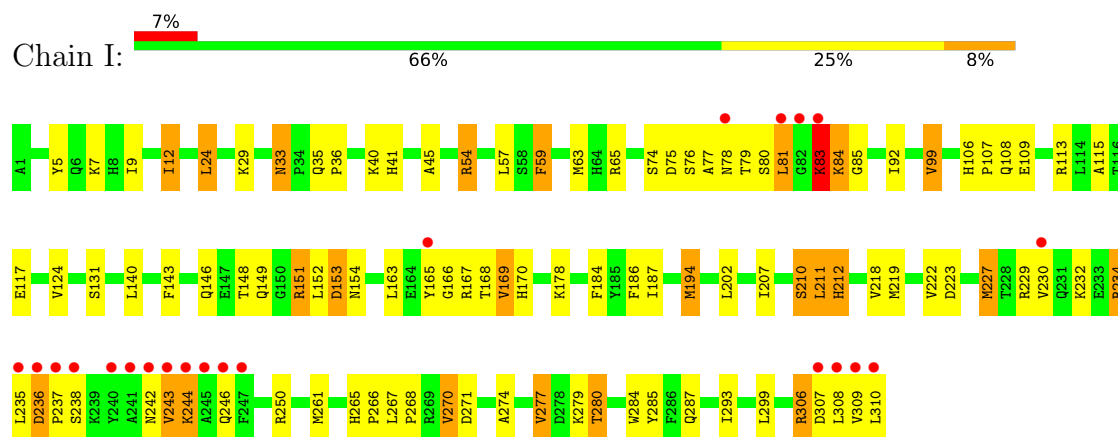
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	B	35	Total 35	O 35	0	0
4	E	71	Total 71	O 71	0	0
4	J	21	Total 21	O 21	0	0
4	L	26	Total 26	O 26	0	0
4	H	16	Total 16	O 16	0	0
4	F	41	Total 41	O 41	0	0

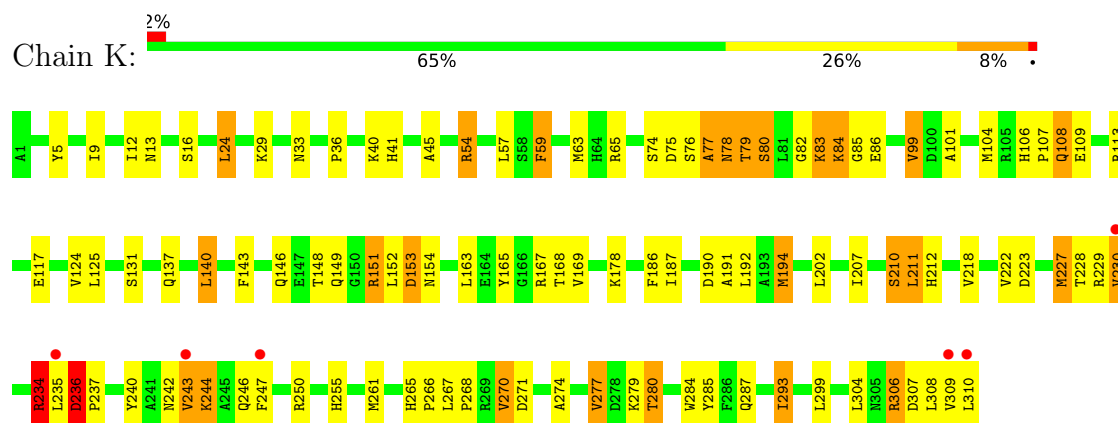
### 3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ( $RSRZ > 2$ ). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

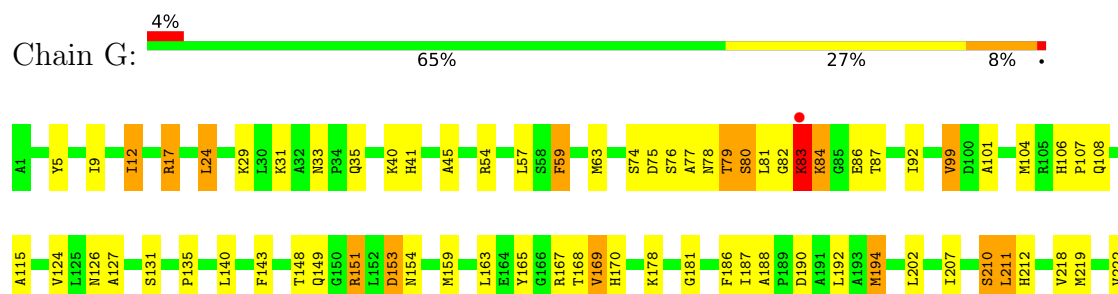
- Molecule 1: Aspartate carbamoyltransferase catalytic chain



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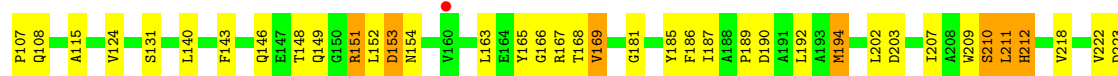


- Molecule 1: Aspartate carbamoyltransferase catalytic chain





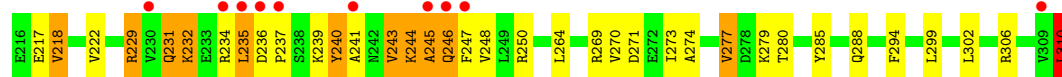
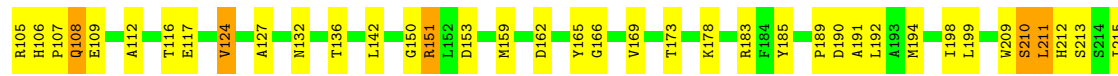
• Molecule 1: Aspartate carbamoyltransferase catalytic chain



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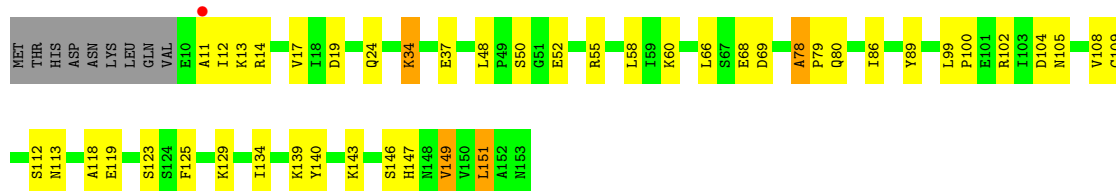
• Molecule 1: Aspartate carbamoyltransferase catalytic chain



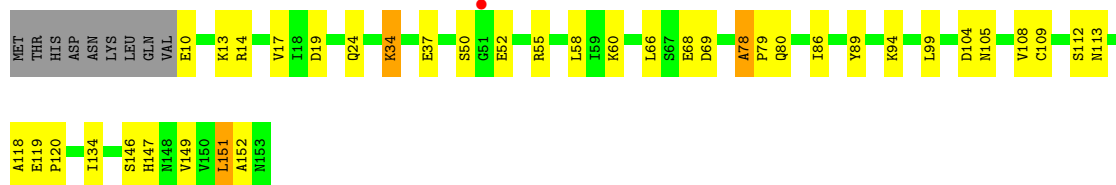
• Molecule 2: Aspartate carbamoyltransferase regulatory chain



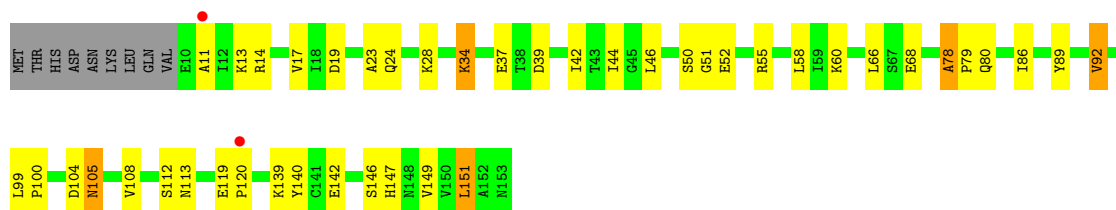




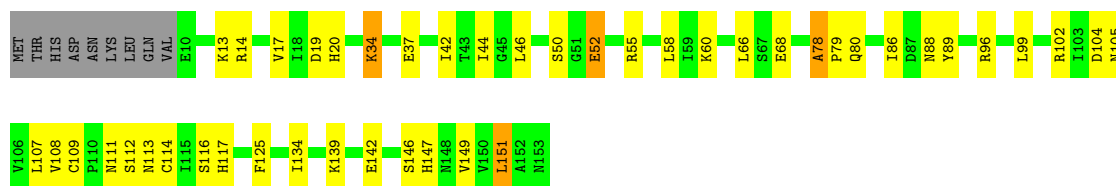
- Molecule 2: Aspartate carbamoyltransferase regulatory chain



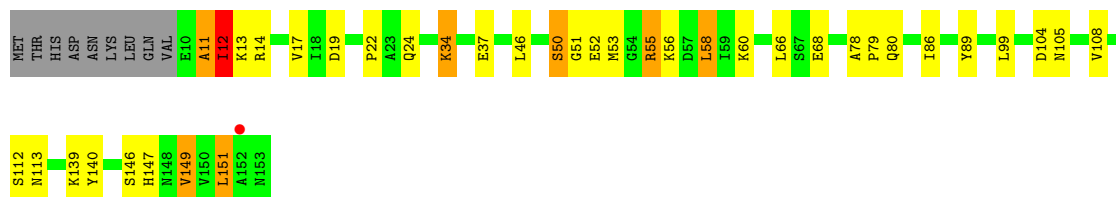
- Molecule 2: Aspartate carbamoyltransferase regulatory chain



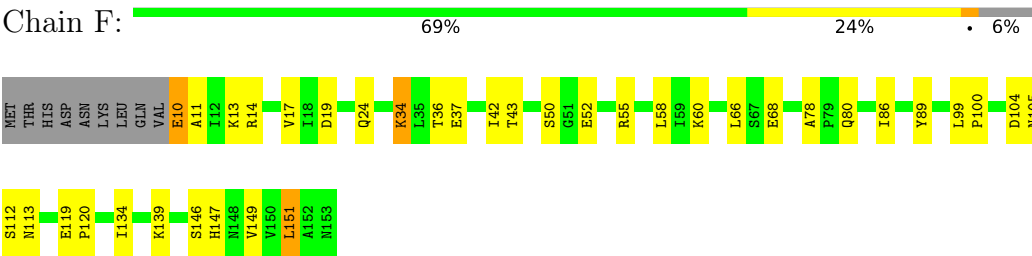
- Molecule 2: Aspartate carbamoyltransferase regulatory chain



- Molecule 2: Aspartate carbamoyltransferase regulatory chain



- Molecule 2: Aspartate carbamoyltransferase regulatory chain



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	124.09Å 144.81Å 203.36Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	29.89 – 2.80 29.89 – 2.80	Depositor EDS
% Data completeness (in resolution range)	92.4 (29.89-2.80) 92.3 (29.89-2.80)	Depositor EDS
$R_{merge}$	0.08	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.84 (at 2.80Å)	Xtriage
Refinement program	PHENIX (phenix.refine: 1.7.2_869)	Depositor
R, $R_{free}$	0.214 , 0.274 0.207 , 0.268	Depositor DCC
$R_{free}$ test set	4208 reflections (5.02%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	75.6	Xtriage
Anisotropy	0.057	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.28 , 69.0	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.53$ , $\langle L^2 \rangle = 0.37$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
$F_o, F_c$ correlation	0.95	EDS
Total number of atoms	21764	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	86.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.54% of the height of the origin peak. No significant pseudotranslation is detected.*

<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

### 5.1 Standard geometry

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

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	0.94	1/2461 (0.0%)	1.17	14/3339 (0.4%)
1	C	0.77	1/2461 (0.0%)	1.02	6/3339 (0.2%)
1	E	0.95	0/2461	1.17	13/3339 (0.4%)
1	G	0.82	5/2461 (0.2%)	1.12	16/3339 (0.5%)
1	I	0.79	1/2461 (0.0%)	1.02	5/3339 (0.1%)
1	K	0.78	1/2461 (0.0%)	1.11	13/3339 (0.4%)
2	B	0.77	0/1144	1.03	4/1546 (0.3%)
2	D	0.75	0/1144	1.05	7/1546 (0.5%)
2	F	0.79	0/1144	1.03	5/1546 (0.3%)
2	H	0.76	0/1144	1.06	5/1546 (0.3%)
2	J	0.81	1/1144 (0.1%)	1.07	5/1546 (0.3%)
2	L	0.77	0/1144	1.02	4/1546 (0.3%)
All	All	0.82	10/21630 (0.0%)	1.09	97/29310 (0.3%)

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	C	0	1
2	H	0	2
All	All	0	3

All (10) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	G	83	LYS	C-O	-13.72	1.06	1.24
2	J	92	VAL	CA-CB	-7.20	1.46	1.54
1	G	82	GLY	CA-C	7.11	1.61	1.51
1	C	83	LYS	C-O	-6.72	1.15	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	G	83	LYS	N-CA	6.46	1.54	1.46
1	A	309	VAL	CA-CB	6.36	1.61	1.54
1	K	83	LYS	C-O	-5.99	1.15	1.23
1	G	234	ARG	CZ-NH1	5.87	1.41	1.32
1	I	83	LYS	C-O	-5.78	1.16	1.24
1	G	81	LEU	CA-C	5.35	1.59	1.52

All (97) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	234	ARG	NE-CZ-NH2	-15.74	105.03	119.20
1	K	82	GLY	N-CA-C	-9.98	100.75	112.73
1	K	82	GLY	CA-C-N	-9.14	107.26	122.79
1	K	82	GLY	C-N-CA	-9.14	107.26	122.79
1	K	236	ASP	N-CA-CB	8.98	121.22	109.55
1	A	245	ALA	N-CA-C	8.37	120.49	111.36
1	G	33	ASN	CA-C-N	8.33	128.39	119.89
1	G	33	ASN	C-N-CA	8.33	128.39	119.89
1	G	83	LYS	O-C-N	-8.17	111.72	122.59
2	B	78	ALA	CA-C-N	8.13	127.85	119.56
2	B	78	ALA	C-N-CA	8.13	127.85	119.56
1	G	234	ARG	CA-CB-CG	7.89	129.87	114.10
1	I	33	ASN	CA-C-N	7.80	129.59	119.84
1	I	33	ASN	C-N-CA	7.80	129.59	119.84
1	G	84	LYS	N-CA-CB	-7.67	98.48	110.30
1	E	33	ASN	CA-C-N	7.64	127.56	119.85
1	E	33	ASN	C-N-CA	7.64	127.56	119.85
1	K	33	ASN	CA-C-N	7.43	127.47	119.89
1	K	33	ASN	C-N-CA	7.43	127.47	119.89
1	C	33	ASN	CA-C-N	7.38	127.42	119.89
1	C	33	ASN	C-N-CA	7.38	127.42	119.89
2	F	78	ALA	CA-C-N	7.37	128.02	119.47
2	F	78	ALA	C-N-CA	7.37	128.02	119.47
2	H	78	ALA	CA-C-N	7.26	127.26	119.28
2	H	78	ALA	C-N-CA	7.26	127.26	119.28
1	A	241	ALA	N-CA-C	7.20	120.19	111.40
1	G	234	ARG	CG-CD-NE	7.17	127.77	112.00
1	E	82	GLY	N-CA-C	7.15	120.89	111.52
2	J	78	ALA	CA-C-N	7.15	128.78	119.84
2	J	78	ALA	C-N-CA	7.15	128.78	119.84
1	E	245	ALA	N-CA-C	7.13	119.14	111.36
1	E	241	ALA	N-CA-C	7.08	120.04	111.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	82	GLY	N-CA-C	7.04	120.74	111.52
2	D	78	ALA	CA-C-N	7.02	128.62	119.84
2	D	78	ALA	C-N-CA	7.02	128.62	119.84
1	G	17	ARG	NE-CZ-NH2	6.97	125.48	119.20
2	L	78	ALA	CA-C-N	6.96	128.54	119.84
2	L	78	ALA	C-N-CA	6.96	128.54	119.84
1	K	83	LYS	N-CA-C	6.90	122.11	112.93
1	G	234	ARG	NE-CZ-NH1	6.75	128.25	121.50
2	H	12	ILE	N-CA-C	6.67	123.20	109.34
1	G	234	ARG	CD-NE-CZ	6.62	133.67	124.40
1	A	240	TYR	N-CA-C	-6.58	104.39	112.88
2	B	109	CYS	CA-C-N	6.55	126.24	119.56
2	B	109	CYS	C-N-CA	6.55	126.24	119.56
1	E	240	TYR	N-CA-C	-6.41	104.61	112.88
1	G	17	ARG	NE-CZ-NH1	-6.37	115.13	121.50
1	C	99	VAL	N-CA-C	6.37	118.00	108.96
2	D	109	CYS	CA-C-N	6.32	126.01	119.56
2	D	109	CYS	C-N-CA	6.32	126.01	119.56
1	E	83	LYS	N-CA-C	-6.29	105.47	113.01
1	A	151	ARG	N-CA-C	6.24	118.00	108.07
1	C	265	HIS	CA-C-N	6.13	125.75	119.56
1	C	265	HIS	C-N-CA	6.13	125.75	119.56
1	G	17	ARG	CD-NE-CZ	6.10	132.94	124.40
1	G	99	VAL	N-CA-C	5.97	117.44	108.96
1	A	83	LYS	N-CA-C	-5.91	105.92	113.01
1	E	2	ASN	N-CA-C	-5.89	101.98	110.40
1	A	189	PRO	CB-CA-C	-5.69	102.17	111.56
1	I	99	VAL	N-CA-C	5.66	117.00	108.96
1	K	79	THR	N-CA-C	-5.63	105.14	111.28
1	K	247	PHE	N-CA-C	-5.60	106.03	112.92
1	A	294	PHE	N-CA-C	5.57	117.16	111.14
1	K	236	ASP	CB-CG-OD1	-5.55	105.62	118.40
1	A	2	ASN	N-CA-C	-5.53	101.63	110.10
2	F	109	CYS	CA-C-N	5.52	125.19	119.56
2	F	109	CYS	C-N-CA	5.52	125.19	119.56
1	G	234	ARG	NH1-CZ-NH2	5.50	126.45	119.30
1	I	236	ASP	N-CA-CB	5.49	117.35	109.78
1	A	222	VAL	N-CA-C	5.44	117.72	109.12
1	E	53	THR	N-CA-C	5.41	116.86	111.07
2	J	105	ASN	N-CA-C	5.40	122.30	110.80
1	C	247	PHE	N-CA-C	-5.38	106.30	112.92
1	K	99	VAL	N-CA-C	5.33	116.53	108.96

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	H	51	GLY	N-CA-C	-5.32	107.72	114.16
2	L	109	CYS	CA-C-N	5.31	124.97	119.56
2	L	109	CYS	C-N-CA	5.31	124.97	119.56
2	F	11	ALA	N-CA-C	5.30	118.58	110.36
1	E	151	ARG	N-CA-C	5.28	116.46	108.07
1	K	234	ARG	CG-CD-NE	5.26	123.57	112.00
1	A	256	ASN	N-CA-C	5.26	118.71	112.72
1	A	244	LYS	CA-CB-CG	5.24	124.58	114.10
1	I	178	LYS	N-CA-C	-5.22	107.08	112.93
1	A	33	ASN	CA-C-N	5.22	125.12	119.85
1	A	33	ASN	C-N-CA	5.22	125.12	119.85
1	G	82	GLY	N-CA-C	5.20	125.50	113.18
1	E	310	LEU	CB-CG-CD1	-5.18	95.17	110.70
2	D	48	LEU	CA-C-N	5.17	124.93	119.76
2	D	48	LEU	C-N-CA	5.17	124.93	119.76
1	G	234	ARG	CB-CA-C	-5.16	103.01	110.96
2	H	149	VAL	CB-CA-C	-5.11	105.39	112.24
2	J	11	ALA	N-CA-C	5.11	117.45	110.55
2	D	149	VAL	CB-CA-C	-5.05	105.47	112.24
2	J	39	ASP	N-CA-C	-5.01	107.22	113.38
1	K	178	LYS	N-CA-C	-5.01	107.32	112.93
1	E	2	ASN	CA-C-N	5.00	125.27	119.47
1	E	2	ASN	C-N-CA	5.00	125.27	119.47

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	C	82	GLY	Peptide
2	H	11	ALA	Peptide
2	H	12	ILE	Peptide

## 5.2 Too-close contacts ⓘ

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	2415	0	2422	117	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	C	2415	0	2422	91	0
1	E	2415	0	2422	122	0
1	G	2415	0	2422	86	0
1	I	2415	0	2422	82	0
1	K	2415	0	2422	88	0
2	B	1127	0	1142	29	0
2	D	1127	0	1143	31	0
2	F	1127	0	1142	26	0
2	H	1127	0	1142	35	0
2	J	1127	0	1142	28	0
2	L	1127	0	1142	32	0
3	B	1	0	0	0	0
3	D	1	0	0	0	0
3	F	1	0	0	0	0
3	H	1	0	0	0	0
3	J	1	0	0	0	0
3	L	1	0	0	0	0
4	A	78	0	0	7	0
4	B	35	0	0	5	0
4	C	52	0	0	9	0
4	D	32	0	0	7	0
4	E	71	0	0	9	0
4	F	41	0	0	1	0
4	G	41	0	0	11	0
4	H	16	0	0	5	0
4	I	49	0	0	6	0
4	J	21	0	0	2	0
4	K	44	0	0	9	0
4	L	26	0	0	3	0
All	All	21764	0	21385	717	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 17.

All (717) 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:E:189:PRO:HB3	1:E:247:PHE:CZ	1.52	1.43
1:A:189:PRO:HB3	1:A:247:PHE:CZ	1.55	1.41
1:E:189:PRO:CB	1:E:247:PHE:HZ	1.53	1.20
1:A:189:PRO:CB	1:A:247:PHE:HZ	1.56	1.17

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:244:LYS:HE2	1:E:247:PHE:CB	1.76	1.16
1:I:81:LEU:HD13	1:I:84:LYS:HG2	1.17	1.15
1:A:29:LYS:HD2	1:A:310:LEU:HB2	1.16	1.13
2:H:12:ILE:CG2	2:H:89:TYR:HA	1.79	1.13
1:K:236:ASP:OD1	1:E:165:TYR:OH	1.64	1.13
1:E:244:LYS:HA	1:E:247:PHE:HD2	1.14	1.12
1:A:210:SER:HB2	1:A:212:HIS:HE1	1.15	1.11
2:H:12:ILE:HG21	2:H:89:TYR:HA	1.17	1.10
1:E:244:LYS:HE2	1:E:247:PHE:HB2	1.28	1.07
1:E:210:SER:HB2	1:E:212:HIS:HE1	1.15	1.06
1:E:210:SER:HB2	1:E:212:HIS:CE1	1.91	1.05
1:A:210:SER:HB2	1:A:212:HIS:CE1	1.92	1.04
1:K:236:ASP:HB2	1:K:237:PRO:HD2	1.36	1.02
2:D:17:VAL:HG22	2:D:60:LYS:HG2	1.42	1.01
1:A:244:LYS:HA	1:A:247:PHE:HD2	1.17	1.01
2:H:17:VAL:HG22	2:H:60:LYS:HG2	1.42	1.00
2:H:12:ILE:HG23	2:H:86:ILE:HG21	1.42	1.00
1:E:244:LYS:O	1:E:247:PHE:HB2	1.62	0.99
2:J:17:VAL:HG22	2:J:60:LYS:HG2	1.46	0.96
1:I:54:ARG:HG2	4:A:457:HOH:O	1.65	0.94
2:F:17:VAL:HG22	2:F:60:LYS:HG2	1.49	0.94
2:B:17:VAL:HG22	2:B:60:LYS:HG2	1.50	0.94
1:E:240:TYR:CE1	1:E:244:LYS:NZ	2.34	0.94
1:G:78:ASN:ND2	1:G:107:PRO:HG3	1.82	0.93
1:A:244:LYS:O	1:A:247:PHE:HB2	1.67	0.93
1:E:244:LYS:HA	1:E:247:PHE:CD2	2.03	0.92
1:I:236:ASP:HB2	1:I:237:PRO:HD2	1.50	0.92
1:A:244:LYS:HA	1:A:247:PHE:CD2	2.05	0.92
1:K:236:ASP:HB2	1:K:237:PRO:CD	1.98	0.92
1:G:163:LEU:HB3	1:G:194:MET:HE3	1.51	0.92
1:G:29:LYS:HE2	1:G:310:LEU:HB3	1.50	0.92
4:K:418:HOH:O	1:C:54:ARG:HG2	1.70	0.91
1:E:29:LYS:HD2	1:E:310:LEU:CB	2.02	0.89
1:I:81:LEU:HD13	1:I:84:LYS:CG	2.01	0.88
1:I:232:LYS:HA	4:I:432:HOH:O	1.73	0.88
1:I:29:LYS:HE2	1:I:310:LEU:HB3	1.52	0.88
1:C:29:LYS:HE2	1:C:310:LEU:HB3	1.54	0.88
1:E:231:GLN:HB2	1:E:234:ARG:HG3	1.56	0.87
1:K:236:ASP:OD1	1:E:165:TYR:CZ	2.28	0.87
1:A:240:TYR:CE1	1:A:244:LYS:NZ	2.42	0.86
1:A:231:GLN:HB2	1:A:234:ARG:HG3	1.58	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:29:LYS:HD2	1:E:310:LEU:HB2	1.58	0.86
1:K:230:VAL:HG12	4:K:444:HOH:O	1.74	0.85
2:H:12:ILE:HG21	2:H:89:TYR:CA	2.04	0.85
1:A:244:LYS:HE3	1:A:247:PHE:HB2	1.59	0.85
1:E:108:GLN:HA	2:F:113:ASN:HD21	1.39	0.85
2:L:17:VAL:HG22	2:L:60:LYS:HG2	1.56	0.85
1:A:244:LYS:CE	1:A:247:PHE:CB	2.55	0.84
1:I:81:LEU:CD1	1:I:84:LYS:HG2	2.06	0.84
1:K:163:LEU:HB3	1:K:194:MET:HE3	1.60	0.83
1:C:293:ILE:HD11	4:C:408:HOH:O	1.77	0.83
1:C:163:LEU:HB3	1:C:194:MET:HE3	1.61	0.83
2:D:11:ALA:HB1	4:D:323:HOH:O	1.77	0.82
1:E:240:TYR:HE1	1:E:244:LYS:HZ2	1.27	0.81
1:K:29:LYS:HE2	1:K:310:LEU:HB3	1.59	0.81
1:E:108:GLN:HA	2:F:113:ASN:ND2	1.95	0.81
1:G:236:ASP:HB2	1:G:237:PRO:HD2	1.62	0.81
1:A:244:LYS:CE	1:A:247:PHE:HB2	2.09	0.80
1:K:78:ASN:CG	1:K:80:SER:O	2.26	0.79
1:G:210:SER:HB2	1:G:212:HIS:NE2	1.98	0.79
1:K:244:LYS:O	1:K:244:LYS:HD3	1.83	0.78
1:I:210:SER:HB2	1:I:212:HIS:NE2	1.99	0.78
2:B:152:ALA:HB2	4:B:308:HOH:O	1.83	0.78
1:I:163:LEU:HB3	1:I:194:MET:HE3	1.65	0.78
2:J:147:HIS:O	2:J:151:LEU:HB2	1.84	0.78
1:C:78:ASN:HD21	1:C:82:GLY:HA2	1.47	0.78
2:F:120:PRO:HB2	4:F:306:HOH:O	1.84	0.78
1:G:77:ALA:O	1:G:78:ASN:C	2.27	0.77
1:E:9:ILE:HG13	1:E:299:LEU:HD22	1.65	0.77
1:I:236:ASP:HB2	1:I:237:PRO:CD	2.13	0.77
1:A:108:GLN:HA	2:B:113:ASN:HD21	1.48	0.76
1:A:244:LYS:HE3	1:A:247:PHE:CB	2.14	0.76
1:A:244:LYS:HE3	1:A:247:PHE:CD2	2.20	0.76
1:I:270:VAL:HG22	1:I:271:ASP:N	2.01	0.76
1:K:236:ASP:CB	1:K:237:PRO:CD	2.62	0.76
2:H:11:ALA:HB1	2:H:12:ILE:HG13	1.66	0.76
1:E:189:PRO:O	1:E:191:ALA:N	2.19	0.75
1:C:244:LYS:O	1:C:244:LYS:HD3	1.86	0.75
1:C:270:VAL:HG22	1:C:271:ASP:N	2.01	0.75
1:A:240:TYR:CD1	1:A:244:LYS:NZ	2.53	0.75
2:H:12:ILE:HG23	2:H:86:ILE:CG2	2.16	0.75
1:A:244:LYS:HE2	1:A:247:PHE:CB	2.15	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:210:SER:HB2	1:C:212:HIS:NE2	2.02	0.75
1:E:240:TYR:HE1	1:E:244:LYS:NZ	1.79	0.75
1:A:189:PRO:HD3	1:A:247:PHE:HE1	1.51	0.74
1:K:210:SER:HB2	1:K:212:HIS:NE2	2.03	0.74
1:A:192:LEU:HD11	1:A:235:LEU:CD2	2.17	0.73
1:E:64:HIS:HD2	4:E:417:HOH:O	1.71	0.73
1:E:189:PRO:HA	4:E:434:HOH:O	1.89	0.73
1:G:163:LEU:HB3	1:G:194:MET:CE	2.19	0.73
2:L:52:GLU:HB3	4:L:314:HOH:O	1.89	0.73
1:I:81:LEU:HD22	1:I:84:LYS:HD3	1.71	0.72
1:E:29:LYS:HD2	1:E:310:LEU:HB3	1.71	0.72
1:K:108:GLN:HA	2:L:113:ASN:ND2	2.03	0.72
1:E:29:LYS:HZ3	1:E:310:LEU:HD22	1.55	0.72
1:C:5:TYR:CD1	1:C:306:ARG:HA	2.24	0.71
1:K:270:VAL:HG22	1:K:271:ASP:N	2.05	0.71
1:A:244:LYS:HE2	1:A:247:PHE:HB3	1.72	0.71
1:K:165:TYR:CD2	1:K:234:ARG:HD3	2.26	0.71
1:I:165:TYR:CD2	1:I:234:ARG:HD3	2.25	0.71
1:G:270:VAL:HG22	1:G:271:ASP:N	2.06	0.70
1:A:213:SER:O	1:A:246:GLN:OE1	2.08	0.70
1:E:189:PRO:HD3	1:E:247:PHE:HE1	1.55	0.70
2:H:12:ILE:CG2	2:H:86:ILE:HG21	2.21	0.70
1:I:29:LYS:HG2	1:I:310:LEU:HA	1.74	0.70
1:C:236:ASP:HB2	1:C:237:PRO:HD2	1.71	0.70
1:E:310:LEU:HD12	1:E:310:LEU:N	2.05	0.69
1:A:9:ILE:HG13	1:A:299:LEU:HD22	1.73	0.69
1:A:108:GLN:HA	2:B:113:ASN:ND2	2.08	0.69
1:E:245:ALA:O	1:E:248:VAL:N	2.25	0.69
1:K:5:TYR:CD1	1:K:306:ARG:HA	2.27	0.69
1:I:117:GLU:OE2	2:J:139:LYS:HE3	1.93	0.69
1:A:308:LEU:HD13	4:A:455:HOH:O	1.91	0.69
2:J:28:LYS:NZ	4:J:318:HOH:O	2.26	0.69
1:A:189:PRO:O	1:A:191:ALA:N	2.26	0.69
1:E:213:SER:O	1:E:246:GLN:OE1	2.11	0.68
1:K:191:ALA:HB1	1:E:239:LYS:NZ	2.08	0.68
1:G:29:LYS:HG2	1:G:310:LEU:HA	1.74	0.68
1:G:244:LYS:O	1:G:244:LYS:HD3	1.92	0.68
1:G:165:TYR:CD2	1:G:234:ARG:HD2	2.27	0.68
2:H:147:HIS:O	2:H:151:LEU:HB2	1.93	0.68
2:L:147:HIS:O	2:L:151:LEU:HB2	1.94	0.68
1:I:35:GLN:HB3	4:I:444:HOH:O	1.94	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:24:LEU:HD13	1:G:143:PHE:HA	1.74	0.68
1:E:245:ALA:C	1:E:248:VAL:H	2.01	0.68
1:G:274:ALA:O	1:G:277:VAL:HG13	1.94	0.67
1:I:77:ALA:O	1:I:78:ASN:HB2	1.94	0.67
2:B:147:HIS:O	2:B:151:LEU:HB2	1.94	0.67
1:E:244:LYS:HE2	1:E:247:PHE:HB3	1.71	0.67
1:C:270:VAL:HG22	1:C:271:ASP:H	1.60	0.67
1:A:209:TRP:HZ3	1:A:211:LEU:HD12	1.60	0.67
1:A:240:TYR:HE1	1:A:244:LYS:NZ	1.92	0.67
1:C:78:ASN:CG	1:C:79:THR:H	2.03	0.67
1:K:24:LEU:HD13	1:K:143:PHE:HA	1.76	0.67
1:A:235:LEU:HD12	4:A:467:HOH:O	1.93	0.67
1:I:238:SER:OG	2:D:143:LYS:HD3	1.95	0.66
1:I:244:LYS:O	1:I:244:LYS:HD3	1.95	0.66
1:K:236:ASP:CB	1:K:237:PRO:HD2	2.18	0.66
1:I:7:LYS:HE2	4:I:413:HOH:O	1.96	0.66
1:K:29:LYS:HG2	1:K:310:LEU:HA	1.75	0.66
2:H:12:ILE:HG22	2:H:89:TYR:HA	1.76	0.66
1:A:232:LYS:O	1:A:232:LYS:HD3	1.96	0.66
2:F:147:HIS:O	2:F:151:LEU:HB2	1.96	0.66
1:C:211:LEU:C	1:C:212:HIS:HD2	2.02	0.66
2:D:147:HIS:O	2:D:151:LEU:HB2	1.96	0.66
1:E:29:LYS:NZ	1:E:310:LEU:HD22	2.11	0.66
1:C:236:ASP:HB2	1:C:237:PRO:CD	2.26	0.65
1:E:159:MET:HE3	1:E:173:THR:OG1	1.96	0.65
1:G:5:TYR:CD1	1:G:306:ARG:HA	2.31	0.65
2:D:13:LYS:HD2	2:D:89:TYR:CE2	2.32	0.65
1:I:151:ARG:NH2	4:I:446:HOH:O	2.28	0.65
1:C:277:VAL:O	1:C:280:THR:HG23	1.96	0.65
1:C:165:TYR:CD2	1:C:234:ARG:HD3	2.31	0.65
1:I:236:ASP:OD2	1:C:165:TYR:OH	2.07	0.65
1:C:78:ASN:ND2	1:C:82:GLY:HA2	2.12	0.64
1:C:29:LYS:HG2	1:C:310:LEU:HA	1.79	0.64
1:I:40:LYS:O	1:I:41:HIS:HB2	1.98	0.64
1:A:189:PRO:CB	1:A:247:PHE:CZ	2.47	0.64
1:E:192:LEU:HD11	1:E:235:LEU:CD1	2.28	0.64
1:C:203:ASP:HA	4:C:439:HOH:O	1.98	0.64
1:E:40:LYS:HG2	1:E:41:HIS:CD2	2.33	0.64
1:I:5:TYR:CD1	1:I:306:ARG:HA	2.32	0.64
1:K:211:LEU:C	1:K:212:HIS:HD2	2.06	0.64
1:G:236:ASP:HB2	1:G:237:PRO:CD	2.27	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:K:77:ALA:O	1:K:78:ASN:HB2	1.98	0.63
1:E:244:LYS:CE	1:E:247:PHE:CB	2.66	0.63
1:C:88:LEU:HB3	2:D:119:GLU:OE1	1.99	0.63
2:H:13:LYS:HD2	2:H:89:TYR:CE2	2.34	0.63
1:K:54:ARG:HG2	4:G:429:HOH:O	1.99	0.63
1:K:117:GLU:OE2	2:L:139:LYS:HE3	1.98	0.63
1:C:24:LEU:HD13	1:C:143:PHE:HA	1.80	0.63
1:A:274:ALA:O	1:A:277:VAL:HG13	1.99	0.63
1:C:106:HIS:CG	1:C:107:PRO:HD2	2.33	0.62
1:I:29:LYS:CE	1:I:310:LEU:HB3	2.28	0.62
1:I:270:VAL:HG22	1:I:271:ASP:H	1.63	0.62
1:I:265:HIS:ND1	1:I:266:PRO:HD2	2.14	0.62
1:G:149:GLN:OE1	1:G:223:ASP:HB3	1.99	0.62
1:A:189:PRO:HB3	1:A:247:PHE:HZ	0.62	0.62
1:E:192:LEU:HD11	1:E:235:LEU:HD11	1.80	0.62
1:E:232:LYS:HD3	1:E:232:LYS:O	1.99	0.62
1:E:209:TRP:HZ3	1:E:211:LEU:HD12	1.65	0.62
1:A:234:ARG:O	1:A:235:LEU:HD23	2.00	0.62
1:C:274:ALA:O	1:C:277:VAL:HG13	1.99	0.62
1:K:228:THR:HB	4:K:421:HOH:O	1.99	0.61
2:H:146:SER:HB3	2:H:149:VAL:HG23	1.82	0.61
1:G:77:ALA:HB3	1:G:79:THR:HG23	1.82	0.61
1:A:234:ARG:C	1:A:235:LEU:HD23	2.26	0.61
1:K:109:GLU:OE1	2:L:113:ASN:HB3	2.00	0.61
1:E:240:TYR:CD1	1:E:244:LYS:NZ	2.59	0.61
1:A:31:LYS:HA	1:A:294:PHE:CE1	2.35	0.61
2:F:14:ARG:HA	2:F:86:ILE:O	2.01	0.61
1:I:24:LEU:HD13	1:I:143:PHE:HA	1.82	0.61
1:A:189:PRO:HD3	1:A:247:PHE:CE1	2.34	0.61
1:K:274:ALA:O	1:K:277:VAL:HG13	2.01	0.61
1:E:199:LEU:HD13	1:E:209:TRP:CH2	2.36	0.61
2:J:146:SER:HB3	2:J:149:VAL:HG23	1.83	0.60
1:K:13:ASN:HB2	4:K:407:HOH:O	2.01	0.60
1:K:149:GLN:OE1	1:K:223:ASP:HB3	2.01	0.60
1:A:136:THR:HG22	1:A:299:LEU:HD12	1.82	0.60
1:C:270:VAL:CG2	1:C:271:ASP:N	2.65	0.60
1:A:244:LYS:O	1:A:244:LYS:HE3	2.01	0.60
1:G:29:LYS:CE	1:G:310:LEU:HB3	2.27	0.60
1:A:199:LEU:HD13	1:A:209:TRP:CH2	2.35	0.60
1:I:211:LEU:C	1:I:212:HIS:HD2	2.09	0.60
1:A:244:LYS:O	1:A:244:LYS:HD3	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:13:LYS:HD2	2:D:89:TYR:HE2	1.66	0.60
1:E:189:PRO:CB	1:E:247:PHE:CZ	2.44	0.60
1:E:178:LYS:HE2	4:E:431:HOH:O	2.01	0.59
1:G:29:LYS:HD3	1:G:310:LEU:HD22	1.84	0.59
1:E:4:LEU:HD12	1:E:302:LEU:HD13	1.85	0.59
1:K:113:ARG:NH2	2:L:142:GLU:OE2	2.35	0.59
1:A:244:LYS:HE3	1:A:247:PHE:CG	2.37	0.59
2:D:80:GLN:CD	2:D:80:GLN:H	2.11	0.59
1:C:211:LEU:C	1:C:212:HIS:CD2	2.81	0.59
1:A:5:TYR:CD1	1:A:306:ARG:HA	2.37	0.59
1:E:274:ALA:O	1:E:277:VAL:HG13	2.03	0.59
1:E:189:PRO:HD3	1:E:247:PHE:CE1	2.37	0.58
1:E:244:LYS:HE3	1:E:247:PHE:CD2	2.37	0.58
1:A:244:LYS:CA	1:A:247:PHE:HD2	2.05	0.58
1:I:108:GLN:HA	2:J:113:ASN:HD21	1.68	0.58
1:K:163:LEU:HB3	1:K:194:MET:CE	2.32	0.58
1:A:236:ASP:HB2	1:A:237:PRO:HD2	1.86	0.58
2:H:55:ARG:C	4:H:312:HOH:O	2.46	0.58
1:G:211:LEU:C	1:G:212:HIS:HD2	2.11	0.58
1:I:149:GLN:OE1	1:I:223:ASP:HB3	2.04	0.58
1:E:189:PRO:HB3	1:E:247:PHE:HZ	0.60	0.58
1:E:244:LYS:O	1:E:244:LYS:HD3	2.04	0.58
1:G:9:ILE:HG21	1:G:299:LEU:HD21	1.86	0.57
1:G:78:ASN:O	1:G:80:SER:O	2.22	0.57
1:I:36:PRO:HB2	1:A:41:HIS:ND1	2.19	0.57
1:K:277:VAL:O	1:K:280:THR:HG23	2.04	0.57
1:A:240:TYR:O	1:A:244:LYS:HB2	2.04	0.57
1:E:244:LYS:CA	1:E:247:PHE:HD2	2.03	0.57
1:E:244:LYS:HE2	1:E:244:LYS:O	2.04	0.57
1:K:40:LYS:O	1:K:41:HIS:HB2	2.03	0.57
1:G:277:VAL:O	1:G:280:THR:HG23	2.04	0.57
1:C:163:LEU:HB3	1:C:194:MET:CE	2.35	0.57
2:B:13:LYS:HD2	2:B:89:TYR:CE2	2.39	0.57
2:B:69:ASP:HB3	4:B:322:HOH:O	2.05	0.57
1:K:236:ASP:CG	1:E:165:TYR:HH	1.98	0.57
1:E:5:TYR:CD1	1:E:306:ARG:HA	2.40	0.57
1:E:106:HIS:CG	1:E:107:PRO:HD2	2.39	0.57
1:K:9:ILE:HG21	1:K:299:LEU:HD21	1.86	0.56
1:C:293:ILE:CD1	4:C:408:HOH:O	2.45	0.56
2:B:118:ALA:HB3	4:B:315:HOH:O	2.04	0.56
2:J:13:LYS:HD2	2:J:89:TYR:CE2	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:51:GLY:HA2	4:J:309:HOH:O	2.05	0.56
1:I:113:ARG:NH2	2:J:142:GLU:OE2	2.38	0.56
1:I:148:THR:C	1:I:149:GLN:HE21	2.12	0.56
1:C:149:GLN:OE1	1:C:223:ASP:HB3	2.04	0.56
1:A:244:LYS:O	1:A:244:LYS:CE	2.53	0.56
1:E:236:ASP:HB2	1:E:237:PRO:HD2	1.87	0.56
1:I:9:ILE:HG21	1:I:299:LEU:HD21	1.88	0.56
1:I:29:LYS:HD3	1:I:310:LEU:HD22	1.88	0.56
2:L:34:LYS:HG2	2:L:37:GLU:OE2	2.05	0.56
1:I:274:ALA:O	1:I:277:VAL:HG13	2.05	0.56
1:C:92:ILE:HG12	1:C:115:ALA:HB1	1.88	0.56
1:A:4:LEU:HD12	1:A:302:LEU:HD13	1.86	0.56
1:A:159:MET:HE3	1:A:173:THR:OG1	2.05	0.56
1:E:185:TYR:CD2	1:E:218:VAL:CG2	2.88	0.56
1:K:265:HIS:ND1	1:K:266:PRO:HD2	2.21	0.56
1:G:211:LEU:HA	4:G:427:HOH:O	2.06	0.56
1:C:29:LYS:CE	1:C:310:LEU:HB3	2.30	0.56
2:D:102:ARG:HG3	4:D:321:HOH:O	2.06	0.56
1:K:270:VAL:HG22	1:K:271:ASP:H	1.68	0.56
1:C:186:PHE:CE1	1:C:194:MET:SD	2.99	0.56
1:E:109:GLU:OE1	2:F:113:ASN:HB3	2.06	0.56
1:K:230:VAL:HG23	4:K:403:HOH:O	2.06	0.55
1:E:245:ALA:O	1:E:248:VAL:O	2.25	0.55
1:K:77:ALA:O	1:K:78:ASN:CB	2.54	0.55
1:K:108:GLN:HA	2:L:113:ASN:HD21	1.69	0.55
1:K:109:GLU:CD	2:L:113:ASN:HD22	2.14	0.55
1:C:9:ILE:HG21	1:C:299:LEU:HD21	1.87	0.55
2:L:13:LYS:HD2	2:L:89:TYR:CE2	2.42	0.55
1:C:265:HIS:ND1	1:C:266:PRO:HD2	2.21	0.55
1:C:108:GLN:HG3	2:D:113:ASN:O	2.07	0.55
1:A:185:TYR:CD2	1:A:218:VAL:CG2	2.90	0.55
1:A:245:ALA:O	1:A:248:VAL:O	2.25	0.55
2:F:19:ASP:HA	2:F:58:LEU:HD12	1.87	0.55
1:I:306:ARG:HG3	1:I:307:ASP:N	2.22	0.55
1:K:106:HIS:CG	1:K:107:PRO:HD2	2.41	0.55
1:G:77:ALA:C	1:G:79:THR:N	2.62	0.55
1:E:243:VAL:O	1:E:247:PHE:HE2	1.90	0.55
2:J:14:ARG:HA	2:J:86:ILE:O	2.06	0.55
2:J:119:GLU:HB3	2:J:120:PRO:HD2	1.87	0.55
1:K:270:VAL:CG2	1:K:271:ASP:N	2.70	0.55
1:C:40:LYS:O	1:C:41:HIS:HB2	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:13:LYS:HD2	2:F:89:TYR:CE2	2.42	0.55
1:I:218:VAL:HG22	1:I:222:VAL:HG13	1.88	0.54
1:K:29:LYS:HD3	1:K:310:LEU:HD22	1.90	0.54
1:G:188:ALA:N	4:G:434:HOH:O	2.40	0.54
1:C:76:SER:O	1:C:78:ASN:O	2.24	0.54
1:A:245:ALA:C	1:A:248:VAL:H	2.14	0.54
1:I:270:VAL:CG2	1:I:271:ASP:N	2.67	0.54
1:G:211:LEU:HD22	4:G:431:HOH:O	2.07	0.54
1:A:106:HIS:CG	1:A:107:PRO:HD2	2.42	0.54
2:B:14:ARG:HA	2:B:86:ILE:O	2.07	0.54
1:G:218:VAL:HG22	1:G:222:VAL:HG13	1.89	0.54
1:G:106:HIS:CG	1:G:107:PRO:HD2	2.42	0.54
2:F:80:GLN:H	2:F:80:GLN:CD	2.16	0.54
2:H:13:LYS:HD2	2:H:89:TYR:HE2	1.71	0.54
1:E:48:PHE:CE1	1:E:56:ARG:HG3	2.43	0.54
1:K:211:LEU:C	1:K:212:HIS:CD2	2.85	0.54
1:G:78:ASN:HD22	1:G:107:PRO:HG3	1.68	0.54
1:E:244:LYS:O	1:E:244:LYS:CD	2.56	0.54
2:H:34:LYS:HG2	2:H:37:GLU:OE2	2.08	0.54
1:A:211:LEU:HD21	4:A:432:HOH:O	2.07	0.54
2:D:11:ALA:CB	4:D:323:HOH:O	2.46	0.54
1:E:244:LYS:O	1:E:244:LYS:CE	2.56	0.54
1:E:250:ARG:HB3	4:E:451:HOH:O	2.08	0.53
1:G:79:THR:O	1:G:80:SER:CB	2.56	0.53
1:C:212:HIS:CD2	1:C:212:HIS:N	2.75	0.53
1:A:150:GLY:O	1:A:151:ARG:HB3	2.08	0.53
1:I:211:LEU:C	1:I:212:HIS:CD2	2.87	0.53
1:K:45:ALA:HB2	1:K:99:VAL:HG11	1.91	0.53
2:D:19:ASP:HA	2:D:58:LEU:HD12	1.90	0.53
2:B:19:ASP:HA	2:B:58:LEU:HD12	1.91	0.53
2:H:19:ASP:HA	2:H:58:LEU:HD12	1.91	0.53
1:I:33:ASN:HB3	4:I:407:HOH:O	2.08	0.53
1:I:277:VAL:O	1:I:280:THR:HG23	2.09	0.53
1:C:29:LYS:HD3	1:C:310:LEU:HD22	1.91	0.53
1:A:114:LEU:HD11	2:B:119:GLU:CB	2.38	0.53
2:D:14:ARG:HA	2:D:86:ILE:O	2.09	0.53
2:F:24:GLN:OE1	2:F:24:GLN:HA	2.08	0.53
1:K:191:ALA:HB1	1:E:239:LYS:HZ3	1.71	0.53
1:E:117:GLU:OE2	2:F:139:LYS:HE3	2.09	0.53
1:G:45:ALA:HB2	1:G:99:VAL:HG11	1.91	0.53
2:J:13:LYS:HD2	2:J:89:TYR:HE2	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:33:ASN:CB	4:I:407:HOH:O	2.57	0.52
1:G:108:GLN:HA	2:H:113:ASN:HD21	1.74	0.52
2:H:14:ARG:HA	2:H:86:ILE:O	2.09	0.52
1:G:151:ARG:NH1	1:G:154:ASN:O	2.42	0.52
1:K:218:VAL:HG22	1:K:222:VAL:HG13	1.90	0.52
1:A:231:GLN:CB	1:A:234:ARG:HG3	2.35	0.52
1:A:244:LYS:O	1:A:244:LYS:CD	2.56	0.52
1:G:59:PHE:O	1:G:63:MET:HG3	2.10	0.52
1:A:54:ARG:CG	4:E:468:HOH:O	2.56	0.52
1:E:243:VAL:O	1:E:247:PHE:CE2	2.62	0.52
2:L:99:LEU:HD21	2:L:134:ILE:HD13	1.90	0.52
1:G:211:LEU:C	1:G:212:HIS:CD2	2.88	0.52
1:G:267:LEU:HB3	1:G:268:PRO:HA	1.91	0.52
1:A:277:VAL:O	1:A:280:THR:HG23	2.09	0.52
1:E:231:GLN:CB	1:E:234:ARG:HG3	2.35	0.52
1:G:165:TYR:CE2	1:G:234:ARG:HD2	2.45	0.52
1:C:88:LEU:HB3	2:D:119:GLU:CD	2.35	0.52
2:H:80:GLN:CD	2:H:80:GLN:H	2.17	0.52
2:F:34:LYS:HG2	2:F:37:GLU:OE2	2.10	0.52
2:B:24:GLN:OE1	2:B:24:GLN:HA	2.09	0.52
1:G:131:SER:O	1:G:167:ARG:HG3	2.10	0.52
1:K:186:PHE:CE1	1:K:194:MET:SD	3.03	0.51
1:K:106:HIS:ND1	1:K:107:PRO:HD2	2.25	0.51
1:G:159:MET:SD	1:G:169:VAL:HG23	2.51	0.51
2:H:104:ASP:O	2:H:105:ASN:HB2	2.10	0.51
1:K:29:LYS:CE	1:K:310:LEU:HB3	2.35	0.51
1:A:114:LEU:HD11	2:B:119:GLU:HB3	1.92	0.51
1:E:211:LEU:HD21	4:E:428:HOH:O	2.10	0.51
1:G:270:VAL:CG2	1:G:271:ASP:N	2.73	0.51
2:D:34:LYS:HG2	2:D:37:GLU:OE2	2.11	0.51
1:A:245:ALA:O	1:A:248:VAL:N	2.42	0.51
1:I:202:LEU:HD22	1:I:207:ILE:HG21	1.93	0.51
1:G:77:ALA:O	1:G:79:THR:N	2.44	0.51
1:C:106:HIS:ND1	1:C:107:PRO:HD2	2.25	0.51
1:E:244:LYS:HE2	1:E:247:PHE:CG	2.41	0.51
1:C:202:LEU:HD22	1:C:207:ILE:HG21	1.92	0.51
2:L:104:ASP:O	2:L:105:ASN:HB2	2.11	0.51
2:D:69:ASP:HB3	4:D:309:HOH:O	2.11	0.51
1:K:187:ILE:N	1:K:187:ILE:HD12	2.26	0.51
1:E:31:LYS:HA	1:E:294:PHE:CE1	2.45	0.51
1:I:163:LEU:HB3	1:I:194:MET:CE	2.37	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:235:LEU:CD1	4:A:467:HOH:O	2.56	0.50
2:D:104:ASP:O	2:D:105:ASN:HB2	2.11	0.50
1:C:218:VAL:HG22	1:C:222:VAL:HG13	1.92	0.50
1:E:244:LYS:CE	1:E:247:PHE:CD2	2.94	0.50
1:I:109:GLU:OE1	2:J:113:ASN:ND2	2.40	0.50
2:D:118:ALA:HB3	4:D:312:HOH:O	2.12	0.50
1:G:270:VAL:HG22	1:G:271:ASP:H	1.74	0.50
1:C:151:ARG:NH1	1:C:154:ASN:O	2.45	0.50
1:A:236:ASP:N	1:A:236:ASP:OD1	2.45	0.50
1:K:83:LYS:HD3	4:C:406:HOH:O	2.10	0.50
1:K:244:LYS:HD3	1:K:244:LYS:C	2.36	0.50
2:B:13:LYS:HD2	2:B:89:TYR:HE2	1.77	0.50
1:E:162:ASP:OD2	1:E:165:TYR:HB2	2.11	0.50
1:G:78:ASN:O	1:G:78:ASN:OD1	2.29	0.50
1:I:238:SER:HB2	2:D:143:LYS:HE3	1.94	0.50
1:K:83:LYS:O	1:K:85:GLY:N	2.44	0.50
1:K:236:ASP:CG	1:E:165:TYR:OH	2.51	0.50
1:A:29:LYS:HZ2	1:A:310:LEU:HD12	1.76	0.50
1:A:185:TYR:CD2	1:A:218:VAL:HG22	2.46	0.50
1:E:105:ARG:HD2	1:E:127:ALA:O	2.12	0.50
1:I:92:ILE:HG12	1:I:115:ALA:HB1	1.94	0.49
1:E:88:LEU:H	2:F:119:GLU:CD	2.20	0.49
1:A:231:GLN:H	1:A:234:ARG:HD2	1.78	0.49
2:H:53:MET:HG3	4:H:312:HOH:O	2.12	0.49
2:H:56:LYS:HB3	4:H:312:HOH:O	2.11	0.49
1:K:191:ALA:HB1	1:E:239:LYS:HZ1	1.77	0.49
1:C:186:PHE:HE1	1:C:194:MET:SD	2.36	0.49
1:A:305:ASN:HB3	1:A:308:LEU:HD23	1.94	0.49
1:E:264:LEU:HB3	1:E:288:GLN:OE1	2.13	0.49
2:F:146:SER:HB3	2:F:149:VAL:HG23	1.94	0.49
1:K:36:PRO:HA	1:K:65:ARG:O	2.13	0.49
1:K:293:ILE:HD11	4:K:426:HOH:O	2.13	0.49
1:G:211:LEU:CA	4:G:427:HOH:O	2.61	0.49
1:C:59:PHE:O	1:C:63:MET:HG3	2.13	0.49
2:L:80:GLN:CD	2:L:80:GLN:H	2.20	0.49
1:G:127:ALA:HA	4:G:401:HOH:O	2.12	0.49
1:C:223:ASP:O	1:C:261:MET:HA	2.13	0.49
1:A:231:GLN:HB2	1:A:234:ARG:CG	2.38	0.49
1:E:310:LEU:HD12	1:E:310:LEU:C	2.37	0.49
1:E:150:GLY:O	1:E:151:ARG:HB3	2.13	0.48
2:F:13:LYS:HD2	2:F:89:TYR:HE2	1.76	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:108:GLN:HA	2:D:113:ASN:ND2	2.27	0.48
2:B:34:LYS:HG2	2:B:37:GLU:OE2	2.12	0.48
1:I:284:TRP:HA	1:I:287:GLN:OE1	2.14	0.48
1:K:202:LEU:HD22	1:K:207:ILE:HG21	1.95	0.48
1:G:92:ILE:HG12	1:G:115:ALA:HB1	1.94	0.48
1:A:243:VAL:O	1:A:247:PHE:HE2	1.96	0.48
1:E:245:ALA:O	1:E:248:VAL:C	2.56	0.48
1:I:106:HIS:CG	1:I:107:PRO:HD2	2.48	0.48
1:K:186:PHE:C	1:K:187:ILE:HD12	2.37	0.48
1:K:212:HIS:CD2	1:K:212:HIS:N	2.81	0.48
1:C:244:LYS:HD3	1:C:244:LYS:C	2.38	0.48
2:D:129:LYS:HE3	4:D:302:HOH:O	2.13	0.48
1:E:244:LYS:CE	1:E:247:PHE:CG	2.97	0.48
1:I:267:LEU:HB3	1:I:268:PRO:HA	1.95	0.48
1:K:59:PHE:O	1:K:63:MET:HG3	2.14	0.48
1:A:162:ASP:OD2	1:A:165:TYR:HB2	2.13	0.48
1:K:148:THR:C	1:K:149:GLN:HE21	2.22	0.48
1:C:78:ASN:O	1:C:79:THR:CG2	2.61	0.48
1:C:148:THR:C	1:C:149:GLN:HE21	2.21	0.48
1:C:228:THR:HB	4:C:441:HOH:O	2.13	0.48
2:D:139:LYS:HE2	2:D:140:TYR:CZ	2.49	0.48
2:B:80:GLN:CD	2:B:80:GLN:H	2.22	0.48
1:G:29:LYS:HG2	1:G:310:LEU:CA	2.42	0.48
1:C:92:ILE:HG12	1:C:115:ALA:CB	2.44	0.48
1:E:244:LYS:HA	1:E:244:LYS:HE3	1.96	0.48
1:I:29:LYS:HG2	1:I:310:LEU:CA	2.43	0.47
1:K:223:ASP:O	1:K:261:MET:HA	2.14	0.47
1:G:212:HIS:CD2	1:G:212:HIS:N	2.80	0.47
1:E:8:HIS:O	1:E:9:ILE:HD13	2.14	0.47
1:A:244:LYS:HE2	1:A:247:PHE:HB2	1.83	0.47
1:E:236:ASP:OD1	1:E:236:ASP:N	2.46	0.47
1:G:79:THR:O	1:G:80:SER:HB2	2.14	0.47
2:F:10:GLU:HG3	2:F:43:THR:HG21	1.97	0.47
1:K:240:TYR:O	1:K:244:LYS:HB2	2.15	0.47
1:C:267:LEU:HB3	1:C:268:PRO:HA	1.97	0.47
2:D:24:GLN:OE1	2:D:24:GLN:HA	2.14	0.47
1:I:186:PHE:CE1	1:I:194:MET:SD	3.07	0.47
1:I:186:PHE:N	1:I:186:PHE:CD2	2.82	0.47
2:H:12:ILE:CG2	2:H:86:ILE:CG2	2.86	0.47
1:A:211:LEU:C	1:A:212:HIS:ND1	2.73	0.47
1:E:136:THR:HG22	1:E:299:LEU:HD12	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:40:LYS:O	1:G:41:HIS:HB2	2.15	0.47
1:G:151:ARG:HG3	1:G:153:ASP:H	1.80	0.47
1:G:308:LEU:HD13	1:G:309:VAL:H	1.80	0.47
1:A:243:VAL:O	1:A:247:PHE:CE2	2.67	0.47
1:E:12:ILE:HD13	1:E:12:ILE:HA	1.83	0.47
1:K:29:LYS:HG2	1:K:310:LEU:CA	2.45	0.46
1:C:227:MET:HB3	1:C:227:MET:HE3	1.74	0.46
1:G:87:THR:HG23	4:G:433:HOH:O	2.15	0.46
1:A:2:ASN:OD1	1:A:2:ASN:C	2.58	0.46
1:A:89:ALA:N	2:B:119:GLU:OE1	2.48	0.46
2:H:79:PRO:HD2	2:H:80:GLN:OE1	2.15	0.46
1:A:244:LYS:HE3	1:A:247:PHE:HD2	1.78	0.46
2:L:146:SER:HB3	2:L:149:VAL:HG23	1.97	0.46
1:A:54:ARG:HG3	4:E:468:HOH:O	2.16	0.46
1:A:192:LEU:HD11	1:A:235:LEU:HD22	1.95	0.46
2:H:139:LYS:HE2	2:H:140:TYR:CZ	2.51	0.46
1:I:151:ARG:NH1	1:I:154:ASN:O	2.49	0.46
1:C:83:LYS:O	1:C:85:GLY:N	2.49	0.46
1:C:306:ARG:HG3	1:C:307:ASP:N	2.30	0.46
1:A:275:THR:O	1:A:278:ASP:HB2	2.16	0.46
2:B:99:LEU:HD21	2:B:134:ILE:HD13	1.97	0.46
1:I:108:GLN:HA	2:J:113:ASN:ND2	2.29	0.46
1:K:84:LYS:HD2	1:K:84:LYS:HA	1.67	0.46
1:C:284:TRP:HA	1:C:287:GLN:OE1	2.15	0.46
2:B:146:SER:HB3	2:B:149:VAL:HG23	1.98	0.46
2:H:55:ARG:NH2	4:H:313:HOH:O	2.47	0.46
2:H:99:LEU:HD12	2:H:99:LEU:HA	1.72	0.46
1:I:212:HIS:CD2	1:I:212:HIS:N	2.81	0.46
1:K:36:PRO:HD2	4:K:425:HOH:O	2.16	0.46
1:G:227:MET:HB3	1:G:227:MET:HE3	1.73	0.46
1:E:244:LYS:HE3	1:E:244:LYS:CA	2.46	0.46
1:E:245:ALA:O	1:E:248:VAL:CA	2.63	0.46
2:J:19:ASP:HA	2:J:58:LEU:HD12	1.96	0.46
2:L:13:LYS:HD2	2:L:89:TYR:HE2	1.80	0.46
1:C:240:TYR:O	1:C:244:LYS:HB2	2.15	0.46
1:I:79:THR:O	1:I:80:SER:HB3	2.15	0.46
1:K:151:ARG:HG3	1:K:153:ASP:H	1.80	0.46
1:G:202:LEU:HD22	1:G:207:ILE:HG21	1.98	0.46
1:E:270:VAL:HG13	1:E:271:ASP:H	1.79	0.46
2:J:46:LEU:HB2	2:L:42:ILE:HB	1.97	0.46
2:J:104:ASP:O	2:J:105:ASN:HB2	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L:14:ARG:HA	2:L:86:ILE:O	2.16	0.46
1:G:31:LYS:HA	1:G:294:PHE:CE1	2.51	0.45
2:D:79:PRO:HD2	2:D:80:GLN:OE1	2.16	0.45
1:E:20:LEU:HD23	1:E:20:LEU:HA	1.75	0.45
2:H:22:PRO:HD3	2:H:80:GLN:HE22	1.81	0.45
1:I:131:SER:O	1:I:167:ARG:HG3	2.17	0.45
2:L:19:ASP:HA	2:L:58:LEU:HD12	1.98	0.45
2:L:78:ALA:N	2:L:79:PRO:HD3	2.30	0.45
2:L:79:PRO:HD2	2:L:80:GLN:OE1	2.17	0.45
1:C:36:PRO:HA	1:C:65:ARG:O	2.15	0.45
1:G:243:VAL:O	1:G:243:VAL:HG13	2.17	0.45
1:A:145:ILE:HG12	1:A:224:ILE:HG13	1.99	0.45
1:I:218:VAL:O	1:I:219:MET:C	2.60	0.45
1:E:244:LYS:CE	1:E:247:PHE:HB2	2.21	0.45
1:I:45:ALA:HB2	1:I:99:VAL:HG11	1.99	0.45
1:K:243:VAL:HG13	1:K:243:VAL:O	2.16	0.45
1:C:45:ALA:HB2	1:C:99:VAL:HG11	1.98	0.45
1:C:151:ARG:HG3	1:C:153:ASP:H	1.81	0.45
1:G:104:MET:HE3	1:G:104:MET:HB2	1.78	0.45
1:C:78:ASN:CG	1:C:79:THR:N	2.72	0.45
1:A:36:PRO:HA	1:A:65:ARG:O	2.17	0.45
1:E:192:LEU:CD1	1:E:235:LEU:HD11	2.45	0.45
2:J:79:PRO:HD2	2:J:80:GLN:OE1	2.17	0.45
2:L:96:ARG:HB3	4:L:307:HOH:O	2.16	0.45
1:K:227:MET:HE3	1:K:227:MET:HB3	1.69	0.45
1:C:308:LEU:HD13	1:C:309:VAL:H	1.81	0.45
1:K:306:ARG:HG3	1:K:307:ASP:N	2.31	0.45
2:D:99:LEU:HA	2:D:100:PRO:HD3	1.84	0.44
1:C:146:GLN:HB2	1:C:152:LEU:HG	1.98	0.44
1:A:232:LYS:HD3	1:A:232:LYS:C	2.42	0.44
1:A:310:LEU:OXT	1:A:310:LEU:HD23	2.17	0.44
1:G:106:HIS:ND1	1:G:107:PRO:HD2	2.33	0.44
1:A:266:PRO:O	1:A:267:LEU:HB2	2.16	0.44
2:D:123:SER:HA	4:D:304:HOH:O	2.18	0.44
1:I:167:ARG:HD3	1:I:170:HIS:ND1	2.32	0.44
1:A:24:LEU:HD11	1:A:142:LEU:HB3	1.99	0.44
1:K:267:LEU:HB3	1:K:268:PRO:HA	2.00	0.44
1:E:40:LYS:O	1:E:41:HIS:HB2	2.18	0.44
1:E:211:LEU:C	1:E:212:HIS:ND1	2.76	0.44
1:G:148:THR:C	1:G:149:GLN:HE21	2.25	0.44
1:C:35:GLN:C	1:C:37:GLU:H	2.25	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:187:ILE:N	1:C:187:ILE:HD12	2.33	0.44
2:L:88:ASN:O	2:L:89:TYR:HB2	2.18	0.44
1:I:236:ASP:OD2	1:C:165:TYR:CZ	2.70	0.44
1:C:79:THR:O	1:C:80:SER:C	2.61	0.44
1:A:129:ASP:OD1	1:A:132:ASN:HB3	2.17	0.44
1:K:101:ALA:HB2	1:K:304:LEU:HD21	1.99	0.44
1:G:187:ILE:HD12	1:G:187:ILE:N	2.33	0.44
1:G:236:ASP:CB	1:G:237:PRO:CD	2.93	0.44
1:K:104:MET:HE3	1:K:104:MET:HB2	1.70	0.44
1:C:76:SER:C	1:C:78:ASN:N	2.75	0.44
2:B:99:LEU:HD12	2:B:99:LEU:HA	1.73	0.44
1:K:146:GLN:HB2	1:K:152:LEU:HG	2.00	0.43
1:G:265:HIS:ND1	1:G:266:PRO:HD2	2.33	0.43
1:C:243:VAL:O	1:C:243:VAL:HG13	2.18	0.43
2:H:24:GLN:HE22	2:F:37:GLU:HA	1.82	0.43
1:A:10:ILE:HD11	1:A:124:VAL:HG22	2.00	0.43
2:D:12:ILE:O	2:D:12:ILE:HG13	2.18	0.43
1:E:232:LYS:O	1:E:235:LEU:O	2.36	0.43
2:H:46:LEU:HB2	2:F:42:ILE:HB	2.01	0.43
1:G:135:PRO:HD2	4:G:414:HOH:O	2.17	0.43
1:A:265:HIS:ND1	1:A:266:PRO:HD2	2.33	0.43
2:B:151:LEU:HD12	2:B:151:LEU:HA	1.85	0.43
2:L:102:ARG:HA	2:L:125:PHE:O	2.19	0.43
1:I:187:ILE:HD12	1:I:187:ILE:N	2.33	0.43
1:K:131:SER:O	1:K:167:ARG:HG3	2.19	0.43
1:K:284:TRP:HA	1:K:287:GLN:OE1	2.18	0.43
1:C:29:LYS:HG2	1:C:310:LEU:CA	2.47	0.43
1:C:189:PRO:HB3	4:C:422:HOH:O	2.18	0.43
1:C:190:ASP:C	1:C:192:LEU:H	2.26	0.43
1:A:244:LYS:CE	1:A:247:PHE:CG	3.00	0.43
2:J:34:LYS:HG2	2:J:37:GLU:OE2	2.18	0.43
2:H:50:SER:HB3	4:H:312:HOH:O	2.17	0.43
1:I:227:MET:HE3	1:I:227:MET:HB3	1.55	0.43
1:G:306:ARG:HG3	1:G:307:ASP:N	2.34	0.43
1:A:108:GLN:HG3	2:B:113:ASN:O	2.19	0.43
1:A:277:VAL:HG22	1:A:285:TYR:OH	2.18	0.43
2:B:119:GLU:HB3	2:B:120:PRO:HD2	2.01	0.43
2:J:42:ILE:HB	2:L:46:LEU:HB2	2.01	0.43
2:H:11:ALA:CB	2:H:12:ILE:HG13	2.43	0.43
1:C:78:ASN:HD21	1:C:82:GLY:CA	2.24	0.43
1:C:101:ALA:HB2	1:C:304:LEU:HD21	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:192:LEU:HD11	1:A:235:LEU:HD21	1.98	0.43
1:A:232:LYS:O	1:A:235:LEU:O	2.37	0.43
1:E:229:ARG:HB2	4:E:433:HOH:O	2.19	0.43
1:E:29:LYS:NZ	1:E:310:LEU:CD2	2.80	0.43
1:E:109:GLU:H	2:F:113:ASN:HD22	1.67	0.43
1:E:240:TYR:O	1:E:244:LYS:HB2	2.19	0.43
1:E:310:LEU:N	1:E:310:LEU:CD1	2.70	0.43
1:I:40:LYS:O	1:I:41:HIS:CB	2.64	0.43
1:K:78:ASN:ND2	1:K:80:SER:O	2.52	0.43
1:K:190:ASP:C	1:K:192:LEU:H	2.26	0.43
1:A:167:ARG:HD2	1:A:167:ARG:HA	1.73	0.43
1:A:240:TYR:CD1	1:A:244:LYS:HG2	2.54	0.43
2:F:119:GLU:HB3	2:F:120:PRO:HD2	2.00	0.43
1:I:113:ARG:HH21	2:J:142:GLU:CD	2.26	0.42
1:I:146:GLN:HB2	1:I:152:LEU:HG	2.01	0.42
1:I:223:ASP:O	1:I:261:MET:HA	2.19	0.42
1:G:35:GLN:HB3	4:G:419:HOH:O	2.19	0.42
2:B:79:PRO:HD2	2:B:80:GLN:OE1	2.18	0.42
1:G:12:ILE:HD13	1:G:12:ILE:HA	1.89	0.42
1:G:126:ASN:O	1:G:135:PRO:HD2	2.19	0.42
1:A:231:GLN:N	4:A:453:HOH:O	2.52	0.42
1:E:310:LEU:C	1:E:310:LEU:CD1	2.92	0.42
2:J:151:LEU:HD12	2:J:151:LEU:HA	1.90	0.42
1:G:17:ARG:HD3	1:G:178:LYS:O	2.18	0.42
1:G:101:ALA:HB2	1:G:304:LEU:HD21	2.01	0.42
1:E:194:MET:HE3	1:E:198:ILE:HG21	2.01	0.42
2:F:99:LEU:HA	2:F:100:PRO:HD3	1.89	0.42
1:I:184:PHE:HB3	1:I:186:PHE:CE2	2.54	0.42
1:C:237:PRO:O	4:C:437:HOH:O	2.22	0.42
1:E:36:PRO:HA	1:E:65:ARG:O	2.20	0.42
1:E:231:GLN:HB2	1:E:234:ARG:CG	2.38	0.42
1:E:232:LYS:HD3	1:E:232:LYS:C	2.44	0.42
2:F:10:GLU:HG3	2:F:10:GLU:O	2.18	0.42
1:K:235:LEU:HD23	1:K:235:LEU:HA	1.92	0.42
1:C:54:ARG:NE	4:C:413:HOH:O	2.16	0.42
1:I:186:PHE:HE1	1:I:194:MET:SD	2.42	0.42
1:I:243:VAL:O	1:I:243:VAL:HG13	2.19	0.42
2:J:44:ILE:HB	2:L:44:ILE:HB	2.01	0.42
1:I:235:LEU:HD23	1:I:235:LEU:HA	1.89	0.42
1:G:92:ILE:HG12	1:G:115:ALA:CB	2.49	0.42
1:C:5:TYR:CD1	1:C:306:ARG:CA	3.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:186:PHE:CD2	1:C:186:PHE:N	2.88	0.42
1:A:12:ILE:HD13	1:A:12:ILE:HA	1.78	0.42
1:A:98:TYR:HB2	1:A:99:VAL:HG13	2.00	0.42
1:E:231:GLN:H	1:E:234:ARG:HD2	1.84	0.42
2:J:78:ALA:N	2:J:79:PRO:HD3	2.34	0.42
1:A:65:ARG:HH11	1:A:65:ARG:HD2	1.65	0.42
1:A:76:SER:O	1:A:77:ALA:C	2.63	0.42
1:I:151:ARG:HG3	1:I:153:ASP:H	1.84	0.42
1:K:137:GLN:HA	1:K:140:LEU:HD23	2.01	0.42
1:K:151:ARG:NH1	1:K:154:ASN:O	2.52	0.42
1:G:167:ARG:HD3	1:G:170:HIS:ND1	2.35	0.42
1:C:131:SER:O	1:C:167:ARG:HG3	2.20	0.42
1:A:280:THR:HG23	1:A:280:THR:H	1.62	0.42
2:B:94:LYS:NZ	4:B:318:HOH:O	2.52	0.42
1:E:106:HIS:ND1	1:E:107:PRO:HD2	2.34	0.42
1:E:185:TYR:CD2	1:E:218:VAL:HG22	2.55	0.42
2:J:139:LYS:HE2	2:J:140:TYR:CZ	2.54	0.42
1:I:36:PRO:HA	1:I:65:ARG:O	2.19	0.42
1:I:59:PHE:O	1:I:63:MET:HG3	2.20	0.42
1:I:83:LYS:O	1:I:85:GLY:N	2.52	0.42
1:C:19:ASP:O	1:C:22:LEU:HB3	2.20	0.42
1:A:54:ARG:HG2	4:E:468:HOH:O	2.18	0.42
2:B:104:ASP:O	2:B:105:ASN:HB2	2.19	0.42
1:G:273:ILE:HD13	1:G:273:ILE:HG21	1.81	0.41
2:D:146:SER:HB3	2:D:149:VAL:HG23	2.02	0.41
1:E:24:LEU:HD11	1:E:142:LEU:HB3	2.02	0.41
1:E:116:THR:HG22	1:E:124:VAL:HG13	2.00	0.41
2:L:114:CYS:C	2:L:116:SER:N	2.78	0.41
2:H:46:LEU:HD13	2:F:36:THR:HB	2.02	0.41
2:F:99:LEU:HD21	2:F:134:ILE:HD13	2.02	0.41
1:G:244:LYS:HD3	1:G:244:LYS:C	2.44	0.41
1:G:284:TRP:HA	1:G:287:GLN:OE1	2.20	0.41
1:C:24:LEU:N	1:C:24:LEU:HD23	2.36	0.41
1:E:59:PHE:CZ	1:E:136:THR:HG21	2.56	0.41
1:I:166:GLY:O	1:I:169:VAL:HG13	2.20	0.41
1:C:166:GLY:O	1:C:169:VAL:HG13	2.20	0.41
2:D:78:ALA:N	2:D:79:PRO:HD3	2.34	0.41
1:E:10:ILE:HD12	1:E:112:ALA:HB1	2.01	0.41
2:L:111:ASN:HB3	2:L:114:CYS:HB2	2.00	0.41
1:I:12:ILE:HD13	1:I:12:ILE:HA	1.92	0.41
1:G:211:LEU:HG	4:G:427:HOH:O	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:235:LEU:HD23	1:G:235:LEU:HA	1.90	0.41
1:C:20:LEU:HD23	1:C:20:LEU:HA	1.86	0.41
2:D:99:LEU:HD21	2:D:134:ILE:HD13	2.03	0.41
2:H:151:LEU:HD12	2:H:151:LEU:HA	1.89	0.41
1:K:86:GLU:HG3	4:K:410:HOH:O	2.19	0.41
1:C:244:LYS:NZ	1:C:247:PHE:HB2	2.36	0.41
1:E:246:GLN:H	1:E:246:GLN:HG3	1.41	0.41
1:I:106:HIS:ND1	1:I:107:PRO:HD2	2.35	0.41
1:C:308:LEU:HD13	1:C:309:VAL:N	2.36	0.41
2:D:102:ARG:HA	2:D:125:PHE:O	2.21	0.41
1:E:49:PHE:O	1:E:75:ASP:HB3	2.21	0.41
2:J:23:ALA:O	2:J:24:GLN:HB2	2.20	0.41
1:A:106:HIS:ND1	1:A:107:PRO:HD2	2.35	0.41
1:A:108:GLN:HG3	2:B:113:ASN:ND2	2.36	0.41
1:A:136:THR:HG22	1:A:299:LEU:CD1	2.50	0.41
1:A:310:LEU:N	1:A:310:LEU:HD22	2.35	0.41
1:K:207:ILE:HD12	4:K:416:HOH:O	2.21	0.41
1:K:240:TYR:CE1	1:K:244:LYS:HG2	2.55	0.41
1:G:190:ASP:C	1:G:192:LEU:H	2.29	0.41
1:G:246:GLN:H	1:G:246:GLN:HG2	1.78	0.41
1:C:29:LYS:NZ	1:C:310:LEU:HD13	2.36	0.41
1:C:154:ASN:HA	1:C:181:GLY:O	2.21	0.41
1:A:60:GLU:O	1:A:61:THR:C	2.62	0.41
1:A:105:ARG:HD2	1:A:127:ALA:O	2.21	0.41
1:A:215:ILE:H	1:A:215:ILE:HG12	1.29	0.41
2:B:78:ALA:N	2:B:79:PRO:HD3	2.34	0.41
1:E:218:VAL:O	1:E:222:VAL:HG13	2.20	0.41
1:E:273:ILE:HG21	1:E:273:ILE:HD13	1.83	0.41
2:F:104:ASP:O	2:F:105:ASN:HB2	2.20	0.41
1:G:186:PHE:CD2	1:G:186:PHE:N	2.89	0.41
1:A:219:MET:HE2	1:A:219:MET:HB2	1.98	0.41
1:E:277:VAL:O	1:E:280:THR:HG23	2.21	0.41
2:L:117:HIS:ND1	4:L:313:HOH:O	2.37	0.41
1:G:108:GLN:HA	2:H:113:ASN:ND2	2.36	0.40
1:A:285:TYR:O	1:A:288:GLN:HB3	2.21	0.40
1:A:308:LEU:CD1	4:A:455:HOH:O	2.59	0.40
1:E:212:HIS:HD2	1:E:217:GLU:OE1	2.04	0.40
2:J:24:GLN:HE22	2:L:37:GLU:HA	1.86	0.40
2:J:99:LEU:HA	2:J:100:PRO:HD3	1.85	0.40
2:L:107:LEU:HB2	2:L:125:PHE:CE1	2.56	0.40
1:K:125:LEU:N	1:K:125:LEU:HD12	2.35	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:200:ASP:O	1:A:204:GLU:HG3	2.21	0.40
1:G:77:ALA:O	1:G:79:THR:HA	2.21	0.40
1:G:106:HIS:N	4:G:403:HOH:O	2.54	0.40
1:C:209:TRP:C	4:C:433:HOH:O	2.64	0.40
2:B:118:ALA:CB	4:B:315:HOH:O	2.65	0.40
1:E:10:ILE:HD11	1:E:124:VAL:HG22	2.03	0.40
1:I:24:LEU:N	1:I:24:LEU:HD23	2.36	0.40
1:C:185:TYR:CD2	1:C:218:VAL:HG21	2.57	0.40
1:A:218:VAL:O	1:A:222:VAL:HG13	2.22	0.40
1:E:41:HIS:CD2	1:E:41:HIS:N	2.89	0.40
1:E:76:SER:O	1:E:77:ALA:C	2.64	0.40
2:L:19:ASP:OD2	2:L:20:HIS:N	2.54	0.40
1:K:186:PHE:HE1	1:K:194:MET:SD	2.42	0.40
1:G:154:ASN:HA	1:G:181:GLY:O	2.21	0.40
1:G:308:LEU:HD13	1:G:309:VAL:N	2.36	0.40
1:A:20:LEU:HA	1:A:20:LEU:HD23	1.89	0.40

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	308/310 (99%)	281 (91%)	24 (8%)	3 (1%)	12	38
1	C	308/310 (99%)	281 (91%)	25 (8%)	2 (1%)	21	51
1	E	308/310 (99%)	285 (92%)	19 (6%)	4 (1%)	9	31
1	G	308/310 (99%)	284 (92%)	21 (7%)	3 (1%)	12	38
1	I	308/310 (99%)	281 (91%)	27 (9%)	0	100	100
1	K	308/310 (99%)	285 (92%)	20 (6%)	3 (1%)	12	38
2	B	142/153 (93%)	137 (96%)	5 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	D	142/153 (93%)	136 (96%)	6 (4%)	0	100	100
2	F	142/153 (93%)	136 (96%)	6 (4%)	0	100	100
2	H	142/153 (93%)	131 (92%)	11 (8%)	0	100	100
2	J	142/153 (93%)	135 (95%)	7 (5%)	0	100	100
2	L	142/153 (93%)	135 (95%)	7 (5%)	0	100	100
All	All	2700/2778 (97%)	2507 (93%)	178 (7%)	15 (1%)	21	51

All (15) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	K	78	ASN
1	C	80	SER
1	A	190	ASP
1	E	190	ASP
1	K	77	ALA
1	K	80	SER
1	G	80	SER
1	A	132	ASN
1	G	83	LYS
1	A	77	ALA
1	E	77	ALA
1	E	132	ASN
1	G	219	MET
1	C	78	ASN
1	E	166	GLY

### 5.3.2 Protein sidechains ⓘ

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	261/261 (100%)	226 (87%)	35 (13%)	4	13
1	C	261/261 (100%)	221 (85%)	40 (15%)	3	10
1	E	261/261 (100%)	229 (88%)	32 (12%)	4	16

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	G	261/261 (100%)	221 (85%)	40 (15%)	3	10
1	I	261/261 (100%)	222 (85%)	39 (15%)	3	10
1	K	261/261 (100%)	220 (84%)	41 (16%)	2	9
2	B	128/137 (93%)	118 (92%)	10 (8%)	11	35
2	D	128/137 (93%)	119 (93%)	9 (7%)	14	40
2	F	128/137 (93%)	118 (92%)	10 (8%)	11	35
2	H	128/137 (93%)	118 (92%)	10 (8%)	11	35
2	J	128/137 (93%)	118 (92%)	10 (8%)	11	35
2	L	128/137 (93%)	119 (93%)	9 (7%)	14	40
All	All	2334/2388 (98%)	2049 (88%)	285 (12%)	5	16

All (285) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	I	12	ILE
1	I	24	LEU
1	I	54	ARG
1	I	57	LEU
1	I	59	PHE
1	I	74	SER
1	I	75	ASP
1	I	76	SER
1	I	81	LEU
1	I	83	LYS
1	I	84	LYS
1	I	124	VAL
1	I	140	LEU
1	I	151	ARG
1	I	153	ASP
1	I	168	THR
1	I	169	VAL
1	I	194	MET
1	I	210	SER
1	I	211	LEU
1	I	212	HIS
1	I	227	MET
1	I	229	ARG
1	I	230	VAL
1	I	234	ARG

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Mol	Chain	Res	Type
1	I	242	ASN
1	I	243	VAL
1	I	244	LYS
1	I	246	GLN
1	I	250	ARG
1	I	270	VAL
1	I	277	VAL
1	I	279	LYS
1	I	280	THR
1	I	285	TYR
1	I	293	ILE
1	I	306	ARG
1	I	308	LEU
1	I	309	VAL
1	K	12	ILE
1	K	16	SER
1	K	24	LEU
1	K	54	ARG
1	K	57	LEU
1	K	59	PHE
1	K	74	SER
1	K	75	ASP
1	K	76	SER
1	K	79	THR
1	K	84	LYS
1	K	108	GLN
1	K	124	VAL
1	K	140	LEU
1	K	151	ARG
1	K	153	ASP
1	K	168	THR
1	K	169	VAL
1	K	194	MET
1	K	210	SER
1	K	211	LEU
1	K	227	MET
1	K	229	ARG
1	K	230	VAL
1	K	234	ARG
1	K	236	ASP
1	K	242	ASN
1	K	243	VAL

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Mol	Chain	Res	Type
1	K	244	LYS
1	K	246	GLN
1	K	250	ARG
1	K	255	HIS
1	K	270	VAL
1	K	277	VAL
1	K	279	LYS
1	K	280	THR
1	K	285	TYR
1	K	293	ILE
1	K	306	ARG
1	K	308	LEU
1	K	309	VAL
1	G	12	ILE
1	G	24	LEU
1	G	54	ARG
1	G	57	LEU
1	G	59	PHE
1	G	74	SER
1	G	75	ASP
1	G	76	SER
1	G	79	THR
1	G	83	LYS
1	G	84	LYS
1	G	86	GLU
1	G	124	VAL
1	G	140	LEU
1	G	151	ARG
1	G	153	ASP
1	G	168	THR
1	G	169	VAL
1	G	194	MET
1	G	210	SER
1	G	211	LEU
1	G	227	MET
1	G	229	ARG
1	G	230	VAL
1	G	234	ARG
1	G	242	ASN
1	G	243	VAL
1	G	244	LYS
1	G	246	GLN

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Mol	Chain	Res	Type
1	G	250	ARG
1	G	255	HIS
1	G	270	VAL
1	G	277	VAL
1	G	279	LYS
1	G	280	THR
1	G	285	TYR
1	G	293	ILE
1	G	306	ARG
1	G	308	LEU
1	G	309	VAL
1	C	12	ILE
1	C	24	LEU
1	C	54	ARG
1	C	57	LEU
1	C	59	PHE
1	C	74	SER
1	C	75	ASP
1	C	76	SER
1	C	81	LEU
1	C	83	LYS
1	C	84	LYS
1	C	124	VAL
1	C	140	LEU
1	C	151	ARG
1	C	153	ASP
1	C	168	THR
1	C	169	VAL
1	C	194	MET
1	C	210	SER
1	C	211	LEU
1	C	212	HIS
1	C	227	MET
1	C	229	ARG
1	C	230	VAL
1	C	234	ARG
1	C	242	ASN
1	C	243	VAL
1	C	244	LYS
1	C	246	GLN
1	C	250	ARG
1	C	255	HIS

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Mol	Chain	Res	Type
1	C	270	VAL
1	C	277	VAL
1	C	279	LYS
1	C	280	THR
1	C	285	TYR
1	C	293	ILE
1	C	306	ARG
1	C	308	LEU
1	C	309	VAL
1	A	2	ASN
1	A	12	ILE
1	A	44	ILE
1	A	54	ARG
1	A	59	PHE
1	A	65	ARG
1	A	69	SER
1	A	79	THR
1	A	81	LEU
1	A	84	LYS
1	A	92	ILE
1	A	108	GLN
1	A	124	VAL
1	A	153	ASP
1	A	169	VAL
1	A	183	ARG
1	A	210	SER
1	A	211	LEU
1	A	215	ILE
1	A	218	VAL
1	A	229	ARG
1	A	231	GLN
1	A	232	LYS
1	A	235	LEU
1	A	243	VAL
1	A	244	LYS
1	A	246	GLN
1	A	269	ARG
1	A	270	VAL
1	A	277	VAL
1	A	279	LYS
1	A	285	TYR
1	A	293	ILE

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Mol	Chain	Res	Type
1	A	308	LEU
1	A	310	LEU
2	D	34	LYS
2	D	50	SER
2	D	52	GLU
2	D	55	ARG
2	D	66	LEU
2	D	68	GLU
2	D	108	VAL
2	D	112	SER
2	D	151	LEU
2	B	10	GLU
2	B	34	LYS
2	B	50	SER
2	B	52	GLU
2	B	55	ARG
2	B	66	LEU
2	B	68	GLU
2	B	108	VAL
2	B	112	SER
2	B	151	LEU
1	E	2	ASN
1	E	12	ILE
1	E	44	ILE
1	E	54	ARG
1	E	59	PHE
1	E	65	ARG
1	E	69	SER
1	E	79	THR
1	E	81	LEU
1	E	84	LYS
1	E	92	ILE
1	E	108	GLN
1	E	124	VAL
1	E	153	ASP
1	E	169	VAL
1	E	183	ARG
1	E	210	SER
1	E	211	LEU
1	E	215	ILE
1	E	218	VAL
1	E	229	ARG

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Mol	Chain	Res	Type
1	E	231	GLN
1	E	232	LYS
1	E	235	LEU
1	E	243	VAL
1	E	244	LYS
1	E	246	GLN
1	E	269	ARG
1	E	277	VAL
1	E	279	LYS
1	E	285	TYR
1	E	310	LEU
2	J	34	LYS
2	J	50	SER
2	J	52	GLU
2	J	55	ARG
2	J	66	LEU
2	J	68	GLU
2	J	92	VAL
2	J	108	VAL
2	J	112	SER
2	J	151	LEU
2	L	34	LYS
2	L	50	SER
2	L	52	GLU
2	L	55	ARG
2	L	66	LEU
2	L	68	GLU
2	L	108	VAL
2	L	112	SER
2	L	151	LEU
2	H	34	LYS
2	H	50	SER
2	H	52	GLU
2	H	55	ARG
2	H	58	LEU
2	H	66	LEU
2	H	68	GLU
2	H	108	VAL
2	H	112	SER
2	H	151	LEU
2	F	10	GLU
2	F	34	LYS

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Mol	Chain	Res	Type
2	F	50	SER
2	F	52	GLU
2	F	55	ARG
2	F	66	LEU
2	F	68	GLU
2	F	108	VAL
2	F	112	SER
2	F	151	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (33) such sidechains are listed below:

Mol	Chain	Res	Type
1	K	13	ASN
1	G	13	ASN
1	G	21	ASN
1	G	78	ASN
1	G	212	HIS
1	A	137	GLN
1	A	174	GLN
1	A	212	HIS
1	A	231	GLN
2	D	40	GLN
2	D	63	ASN
2	D	105	ASN
2	D	113	ASN
2	D	117	HIS
2	B	63	ASN
2	B	113	ASN
2	B	117	HIS
1	E	41	HIS
1	E	64	HIS
1	E	174	GLN
1	E	212	HIS
1	E	231	GLN
2	J	24	GLN
2	J	40	GLN
2	J	63	ASN
2	J	113	ASN
2	L	113	ASN
2	H	24	GLN
2	H	63	ASN
2	H	113	ASN

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Mol	Chain	Res	Type
2	F	40	GLN
2	F	63	ASN
2	F	113	ASN

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

## 5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

There are no non-standard protein/DNA/RNA residues in this entry.

## 5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry ⓘ

Of 6 ligands modelled in this entry, 6 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 ⓘ

There are no such residues in this entry.

## 5.8 Polymer linkage issues ⓘ

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	310/310 (100%)	-0.40	10 (3%) 50 40	42, 61, 202, 311	0
1	C	310/310 (100%)	-0.12	9 (2%) 53 43	51, 79, 210, 318	0
1	E	310/310 (100%)	-0.38	13 (4%) 40 32	41, 60, 201, 335	0
1	G	310/310 (100%)	-0.10	13 (4%) 40 32	55, 79, 205, 316	0
1	I	310/310 (100%)	-0.21	22 (7%) 22 16	43, 70, 204, 320	0
1	K	310/310 (100%)	-0.25	6 (1%) 66 57	51, 78, 203, 307	0
2	B	144/153 (94%)	-0.31	1 (0%) 84 77	51, 71, 121, 189	0
2	D	144/153 (94%)	-0.12	1 (0%) 84 77	57, 78, 136, 190	0
2	F	144/153 (94%)	-0.35	0 100 100	52, 72, 125, 189	0
2	H	144/153 (94%)	-0.16	1 (0%) 84 77	63, 84, 128, 189	0
2	J	144/153 (94%)	-0.16	2 (1%) 73 64	50, 74, 124, 188	0
2	L	144/153 (94%)	-0.23	0 100 100	55, 73, 127, 190	0
All	All	2724/2778 (98%)	-0.24	78 (2%) 53 43	41, 74, 189, 335	0

All (78) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	E	235	LEU	4.8
1	I	238	SER	4.2
1	I	309	VAL	4.0
1	I	230	VAL	3.7
1	G	241	ALA	3.7
1	I	242	ASN	3.5
1	C	235	LEU	3.5
1	I	237	PRO	3.5
1	C	230	VAL	3.4
1	I	308	LEU	3.4
1	E	236	ASP	3.4

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Mol	Chain	Res	Type	RSRZ
2	J	120	PRO	3.4
1	K	310	LEU	3.3
1	E	245	ALA	3.2
1	E	237	PRO	3.2
1	G	309	VAL	3.2
1	A	85	GLY	3.1
1	I	310	LEU	3.1
1	K	235	LEU	3.1
1	G	240	TYR	3.0
1	E	246	GLN	3.0
1	K	243	VAL	3.0
1	G	236	ASP	2.9
1	I	82	GLY	2.9
1	G	242	ASN	2.8
1	I	235	LEU	2.8
1	A	246	GLN	2.8
1	I	236	ASP	2.7
1	K	309	VAL	2.7
1	G	243	VAL	2.7
1	C	309	VAL	2.7
1	E	85	GLY	2.6
1	I	247	PHE	2.6
1	I	241	ALA	2.6
1	I	240	TYR	2.6
1	E	230	VAL	2.6
1	G	237	PRO	2.5
1	A	240	TYR	2.5
1	A	243	VAL	2.5
1	I	81	LEU	2.5
1	G	238	SER	2.5
1	C	247	PHE	2.5
1	A	247	PHE	2.5
1	G	235	LEU	2.4
1	E	309	VAL	2.4
1	A	245	ALA	2.4
1	G	83	LYS	2.4
1	G	310	LEU	2.4
1	A	235	LEU	2.4
1	E	247	PHE	2.4
1	C	308	LEU	2.4
1	C	237	PRO	2.4
2	H	152	ALA	2.3

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Mol	Chain	Res	Type	RSRZ
1	A	237	PRO	2.3
2	B	51	GLY	2.3
1	I	83	LYS	2.3
2	J	11	ALA	2.2
1	G	308	LEU	2.2
1	I	307	ASP	2.2
1	E	234	ARG	2.2
1	I	243	VAL	2.2
1	G	247	PHE	2.2
1	A	241	ALA	2.2
1	I	165	TYR	2.2
1	E	241	ALA	2.2
1	K	230	VAL	2.2
1	C	243	VAL	2.2
1	I	244	LYS	2.2
2	D	11	ALA	2.2
1	I	246	GLN	2.1
1	E	79	THR	2.1
1	A	310	LEU	2.1
1	K	247	PHE	2.1
1	I	78	ASN	2.1
1	C	160	VAL	2.0
1	C	83	LYS	2.0
1	E	81	LEU	2.0
1	I	245	ALA	2.0

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

There are no non-standard protein/DNA/RNA residues in this entry.

## 6.3 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

## 6.4 Ligands ⓘ

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<sup>th</sup> 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( $\text{\AA}^2$ )	Q<0.9
3	ZN	D	201	1/1	0.99	0.02	59,59,59,59	0
3	ZN	L	201	1/1	0.99	0.02	57,57,57,57	0
3	ZN	H	201	1/1	0.99	0.07	98,98,98,98	0
3	ZN	F	201	1/1	0.99	0.04	58,58,58,58	0
3	ZN	J	201	1/1	1.00	0.04	75,75,75,75	0
3	ZN	B	201	1/1	1.00	0.01	59,59,59,59	0

## 6.5 Other polymers [i](#)

There are no such residues in this entry.