



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 11:27 AM UTC

PDB ID : 5C73 / pdb_00005c73
Title : ATP-driven lipid-linked oligosaccharide flippase PglK in outward-occluded conformation
Authors : Perez, C.; Locher, K.P.
Deposited on : 2015-06-24
Resolution : 5.90 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

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity	:	4-5-2 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

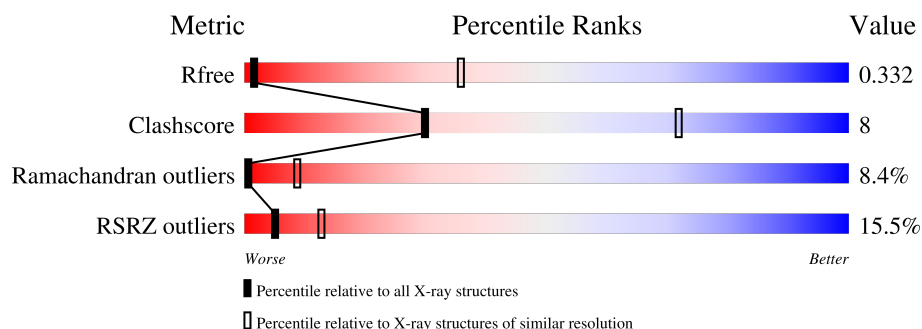
1 Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 5.90 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	1135 (7.80-4.00)
Clashscore	190562	1201 (7.80-4.00)
Ramachandran outliers	187476	1026 (7.80-4.00)
RSRZ outliers	180081	1128 (7.80-4.00)

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

Mol	Chain	Length	Quality of chain
1	A	564	<div> <div>12%</div> <div>82%</div> <div>16%</div> <div>.</div> </div>
1	B	564	<div> <div>14%</div> <div>81%</div> <div>17%</div> <div>.</div> </div>
1	C	564	<div> <div>19%</div> <div>82%</div> <div>14%</div> <div>.</div> </div>
1	F	564	<div> <div>15%</div> <div>84%</div> <div>14%</div> <div>.</div> </div>
1	G	564	<div> <div>15%</div> <div>82%</div> <div>16%</div> <div>.</div> </div>
1	K	564	<div> <div>17%</div> <div>84%</div> <div>14%</div> <div>.</div> </div>

2 Entry composition

There is only 1 type of molecule in this entry. The entry contains 16752 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 Protein glycosylation K.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
1	C	564	Total	C	N	O	0	0	0
			2792	1664	564	564			
1	K	564	Total	C	N	O	0	0	0
			2792	1664	564	564			
1	A	564	Total	C	N	O	0	0	0
			2792	1664	564	564			
1	B	564	Total	C	N	O	0	0	0
			2792	1664	564	564			
1	G	564	Total	C	N	O	0	0	0
			2792	1664	564	564			
1	F	564	Total	C	N	O	0	0	0
			2792	1664	564	564			

There are 72 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	2	VAL	LEU	conflict	UNP Q0P9C4
C	27	VAL	ILE	conflict	UNP Q0P9C4
C	105	LYS	TYR	conflict	UNP Q0P9C4
C	202	LEU	VAL	conflict	UNP Q0P9C4
C	325	ASN	ASP	conflict	UNP Q0P9C4
C	341	GLY	GLU	conflict	UNP Q0P9C4
C	410	LYS	GLU	conflict	UNP Q0P9C4
C	416	SER	ASN	conflict	UNP Q0P9C4
C	418	ALA	THR	conflict	UNP Q0P9C4
C	456	LYS	ARG	conflict	UNP Q0P9C4
C	505	ILE	MET	conflict	UNP Q0P9C4
C	510	GLN	GLU	conflict	UNP Q0P9C4
K	2	VAL	LEU	conflict	UNP Q0P9C4
K	27	VAL	ILE	conflict	UNP Q0P9C4
K	105	LYS	TYR	conflict	UNP Q0P9C4
K	202	LEU	VAL	conflict	UNP Q0P9C4
K	325	ASN	ASP	conflict	UNP Q0P9C4

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Chain	Residue	Modelled	Actual	Comment	Reference
K	341	GLY	GLU	conflict	UNP Q0P9C4
K	410	LYS	GLU	conflict	UNP Q0P9C4
K	416	SER	ASN	conflict	UNP Q0P9C4
K	418	ALA	THR	conflict	UNP Q0P9C4
K	456	LYS	ARG	conflict	UNP Q0P9C4
K	505	ILE	MET	conflict	UNP Q0P9C4
K	510	GLN	GLU	conflict	UNP Q0P9C4
A	2	VAL	LEU	conflict	UNP Q0P9C4
A	27	VAL	ILE	conflict	UNP Q0P9C4
A	105	LYS	TYR	conflict	UNP Q0P9C4
A	202	LEU	VAL	conflict	UNP Q0P9C4
A	325	ASN	ASP	conflict	UNP Q0P9C4
A	341	GLY	GLU	conflict	UNP Q0P9C4
A	410	LYS	GLU	conflict	UNP Q0P9C4
A	416	SER	ASN	conflict	UNP Q0P9C4
A	418	ALA	THR	conflict	UNP Q0P9C4
A	456	LYS	ARG	conflict	UNP Q0P9C4
A	505	ILE	MET	conflict	UNP Q0P9C4
A	510	GLN	GLU	conflict	UNP Q0P9C4
B	2	VAL	LEU	conflict	UNP Q0P9C4
B	27	VAL	ILE	conflict	UNP Q0P9C4
B	105	LYS	TYR	conflict	UNP Q0P9C4
B	202	LEU	VAL	conflict	UNP Q0P9C4
B	325	ASN	ASP	conflict	UNP Q0P9C4
B	341	GLY	GLU	conflict	UNP Q0P9C4
B	410	LYS	GLU	conflict	UNP Q0P9C4
B	416	SER	ASN	conflict	UNP Q0P9C4
B	418	ALA	THR	conflict	UNP Q0P9C4
B	456	LYS	ARG	conflict	UNP Q0P9C4
B	505	ILE	MET	conflict	UNP Q0P9C4
B	510	GLN	GLU	conflict	UNP Q0P9C4
G	2	VAL	LEU	conflict	UNP Q0P9C4
G	27	VAL	ILE	conflict	UNP Q0P9C4
G	105	LYS	TYR	conflict	UNP Q0P9C4
G	202	LEU	VAL	conflict	UNP Q0P9C4
G	325	ASN	ASP	conflict	UNP Q0P9C4
G	341	GLY	GLU	conflict	UNP Q0P9C4
G	410	LYS	GLU	conflict	UNP Q0P9C4
G	416	SER	ASN	conflict	UNP Q0P9C4
G	418	ALA	THR	conflict	UNP Q0P9C4
G	456	LYS	ARG	conflict	UNP Q0P9C4
G	505	ILE	MET	conflict	UNP Q0P9C4

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Chain	Residue	Modelled	Actual	Comment	Reference
G	510	GLN	GLU	conflict	UNP Q0P9C4
F	2	VAL	LEU	conflict	UNP Q0P9C4
F	27	VAL	ILE	conflict	UNP Q0P9C4
F	105	LYS	TYR	conflict	UNP Q0P9C4
F	202	LEU	VAL	conflict	UNP Q0P9C4
F	325	ASN	ASP	conflict	UNP Q0P9C4
F	341	GLY	GLU	conflict	UNP Q0P9C4
F	410	LYS	GLU	conflict	UNP Q0P9C4
F	416	SER	ASN	conflict	UNP Q0P9C4
F	418	ALA	THR	conflict	UNP Q0P9C4
F	456	LYS	ARG	conflict	UNP Q0P9C4
F	505	ILE	MET	conflict	UNP Q0P9C4
F	510	GLN	GLU	conflict	UNP Q0P9C4

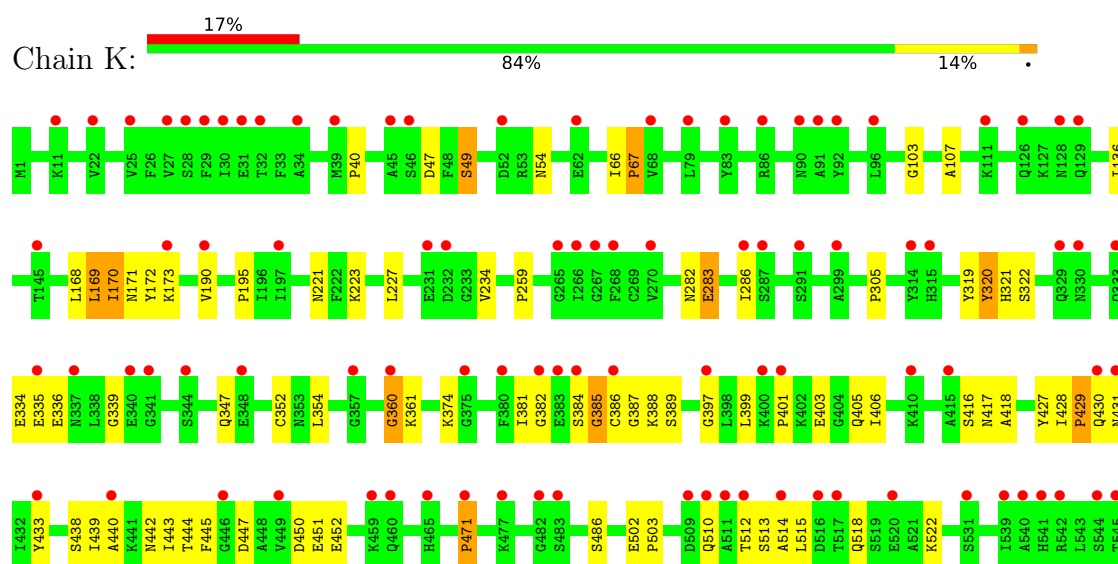
3 Residue-property plots

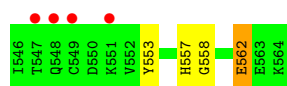
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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: Protein glycosylation K

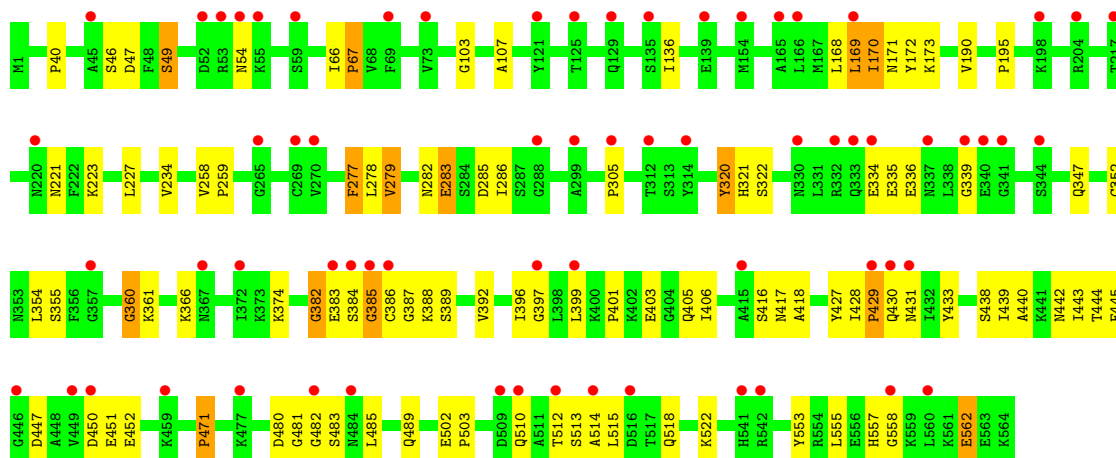
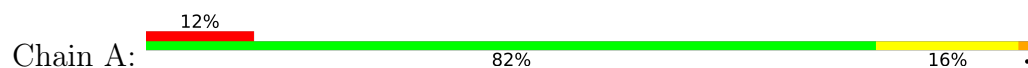


• Molecule 1: Protein glycosylation K

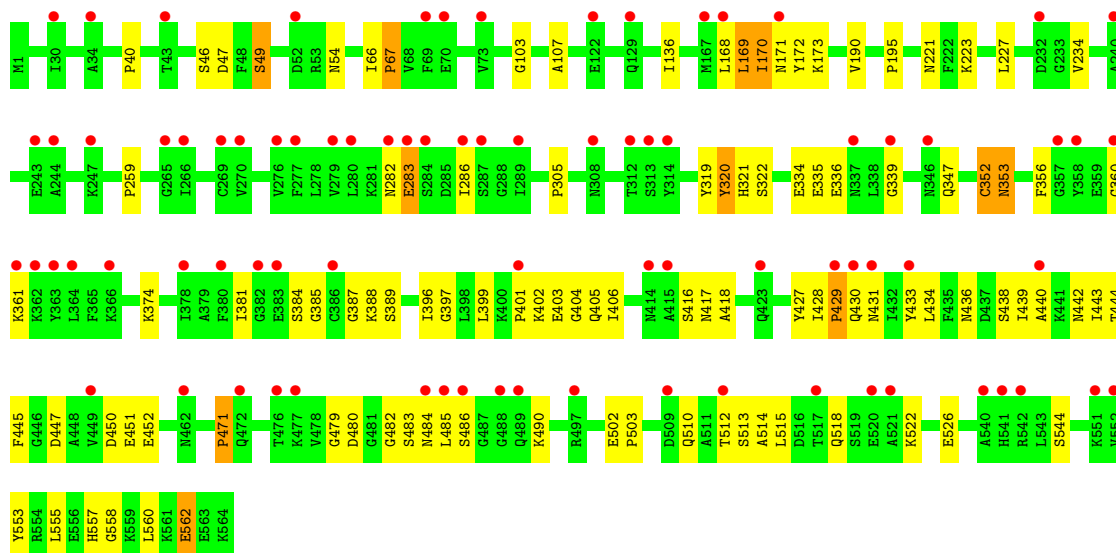
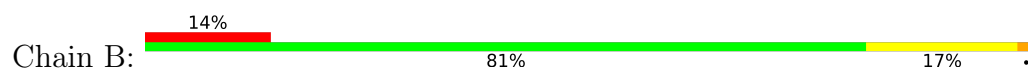




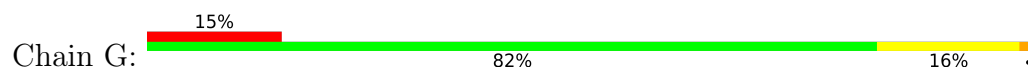
• Molecule 1: Protein glycosylation K

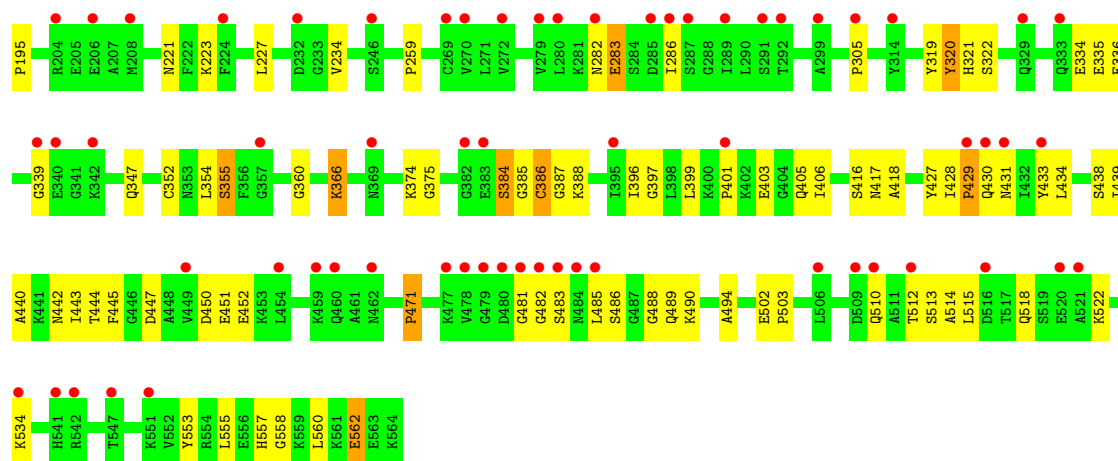


• Molecule 1: Protein glycosylation K

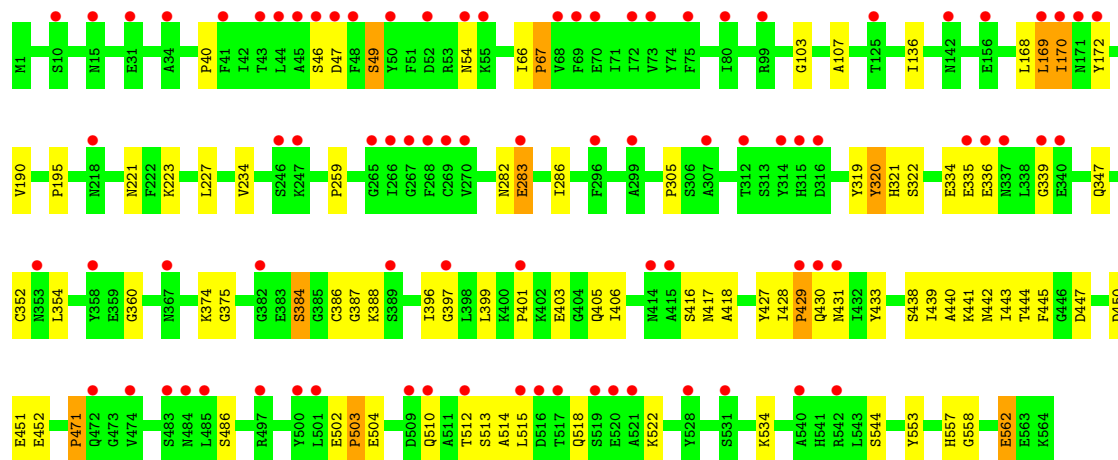
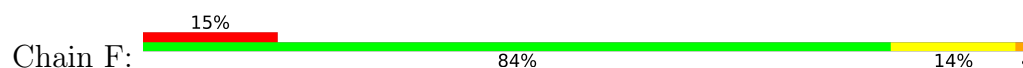


• Molecule 1: Protein glycosylation K





• Molecule 1: Protein glycosylation K



4 Data and refinement statistics

Property	Value	Source
Space group	P 43 21 2	Depositor
Cell constants a, b, c, α , β , γ	200.03Å 200.03Å 693.95Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	29.94 – 5.90 29.94 – 5.90	Depositor EDS
% Data completeness (in resolution range)	84.5 (29.94-5.90) 83.8 (29.94-5.90)	Depositor EDS
R_{merge}	0.20	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.58 (at 5.67Å)	Xtriage
Refinement program	PHENIX	Depositor
R, R_{free}	0.284 , 0.317 0.300 , 0.332	Depositor DCC
R_{free} test set	1669 reflections (5.08%)	wwPDB-VP
Wilson B-factor (Å ²)	319.2	Xtriage
Anisotropy	0.122	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.48 , 782.6	EDS
L-test for twinning ²	$\langle L \rangle = 0.42$, $\langle L^2 \rangle = 0.25$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.73	EDS
Total number of atoms	16752	wwPDB-VP
Average B, all atoms (Å ²)	368.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.78% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

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	0.58	0/2791	0.98	13/3889 (0.3%)
1	B	0.57	0/2791	0.97	13/3889 (0.3%)
1	C	0.57	0/2791	1.00	16/3889 (0.4%)
1	F	0.57	0/2791	1.00	12/3889 (0.3%)
1	G	0.58	0/2791	0.99	13/3889 (0.3%)
1	K	0.55	0/2791	0.97	12/3889 (0.3%)
All	All	0.57	0/16746	0.99	79/23334 (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

There are no bond length outliers.

All (79) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	429	PRO	N-CA-CB	9.42	109.75	101.83
1	G	429	PRO	N-CA-CB	9.37	109.70	101.83
1	K	429	PRO	N-CA-CB	9.35	109.69	101.83
1	B	429	PRO	N-CA-CB	9.33	109.67	101.83
1	A	429	PRO	N-CA-CB	9.32	109.66	101.83
1	F	429	PRO	N-CA-CB	9.31	109.65	101.83
1	B	401	PRO	N-CA-CB	7.65	110.45	103.34
1	K	401	PRO	N-CA-CB	7.62	110.42	103.34
1	C	401	PRO	N-CA-CB	7.51	110.32	103.34
1	G	401	PRO	N-CA-CB	7.51	110.32	103.34
1	A	401	PRO	N-CA-CB	7.50	110.31	103.34
1	C	272	VAL	N-CA-C	7.34	117.86	110.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	F	401	PRO	N-CA-CB	7.30	110.13	103.34
1	C	471	PRO	N-CA-CB	6.83	110.43	103.25
1	A	471	PRO	N-CA-CB	6.83	110.42	103.25
1	B	471	PRO	N-CA-CB	6.82	110.41	103.25
1	F	471	PRO	N-CA-CB	6.79	110.38	103.25
1	G	471	PRO	N-CA-CB	6.79	110.38	103.25
1	K	471	PRO	N-CA-CB	6.65	110.23	103.25
1	A	305	PRO	N-CA-CB	6.63	110.62	103.33
1	C	305	PRO	N-CA-CB	6.57	110.55	103.33
1	K	305	PRO	N-CA-CB	6.53	110.51	103.33
1	F	305	PRO	N-CA-CB	6.46	110.43	103.33
1	G	305	PRO	N-CA-CB	6.40	110.37	103.33
1	B	259	PRO	N-CA-CB	6.39	109.96	103.25
1	K	67	PRO	N-CA-CB	6.38	109.95	103.25
1	B	305	PRO	N-CA-CB	6.37	110.34	103.33
1	C	503	PRO	N-CA-CB	6.37	108.89	103.35
1	B	503	PRO	N-CA-CB	6.37	108.89	103.35
1	C	67	PRO	N-CA-CB	6.36	109.93	103.25
1	G	67	PRO	N-CA-CB	6.35	109.92	103.25
1	A	67	PRO	N-CA-CB	6.34	109.91	103.25
1	K	40	PRO	N-CA-CB	6.29	110.48	103.44
1	B	67	PRO	N-CA-CB	6.27	109.83	103.25
1	F	67	PRO	N-CA-CB	6.26	109.83	103.25
1	K	259	PRO	N-CA-CB	6.25	109.81	103.25
1	A	503	PRO	N-CA-CB	6.24	108.78	103.35
1	F	40	PRO	N-CA-CB	6.19	110.37	103.44
1	F	195	PRO	N-CA-CB	6.19	109.85	103.23
1	C	259	PRO	N-CA-CB	6.12	109.68	103.25
1	F	503	PRO	N-CA-CB	6.10	108.66	103.35
1	B	195	PRO	N-CA-CB	6.09	109.65	103.25
1	K	195	PRO	N-CA-CB	6.09	109.64	103.25
1	F	259	PRO	N-CA-CB	6.07	109.63	103.25
1	G	503	PRO	N-CA-CB	6.06	108.62	103.35
1	C	195	PRO	N-CA-CB	6.02	109.58	103.25
1	B	169	LEU	CA-C-N	6.02	132.54	121.70
1	B	169	LEU	C-N-CA	6.02	132.54	121.70
1	G	259	PRO	N-CA-CB	6.01	109.56	103.25
1	C	40	PRO	N-CA-CB	6.01	110.17	103.44
1	G	40	PRO	N-CA-CB	6.00	110.16	103.44
1	B	40	PRO	N-CA-CB	5.98	110.14	103.44
1	A	169	LEU	CA-C-N	5.98	132.46	121.70
1	A	169	LEU	C-N-CA	5.98	132.46	121.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	40	PRO	N-CA-CB	5.96	110.12	103.44
1	F	169	LEU	CA-C-N	5.94	132.40	121.70
1	F	169	LEU	C-N-CA	5.94	132.40	121.70
1	G	195	PRO	N-CA-CB	5.93	109.47	103.25
1	C	169	LEU	CA-C-N	5.91	132.34	121.70
1	C	169	LEU	C-N-CA	5.91	132.34	121.70
1	K	169	LEU	CA-C-N	5.91	132.33	121.70
1	K	169	LEU	C-N-CA	5.91	132.33	121.70
1	A	259	PRO	N-CA-CB	5.89	109.43	103.25
1	G	169	LEU	CA-C-N	5.89	132.30	121.70
1	G	169	LEU	C-N-CA	5.89	132.30	121.70
1	A	195	PRO	N-CA-CB	5.83	109.47	103.23
1	K	503	PRO	N-CA-CB	5.83	108.87	103.39
1	B	347	GLN	CA-C-O	5.55	121.16	117.94
1	C	347	GLN	CA-C-O	5.39	121.07	117.94
1	A	347	GLN	CA-C-O	5.31	121.02	117.94
1	G	386	CYS	N-CA-C	-5.21	106.01	114.09
1	G	347	GLN	CA-C-O	5.21	120.96	117.94
1	C	284	SER	CA-C-N	-5.17	113.78	123.03
1	C	284	SER	C-N-CA	-5.17	113.78	123.03
1	C	386	CYS	N-CA-C	-5.14	106.12	114.09
1	K	347	GLN	CA-C-O	5.11	120.90	117.94
1	B	526	GLU	N-CA-C	-5.09	107.73	114.04
1	F	347	GLN	CA-C-O	5.02	120.85	117.94
1	A	258	VAL	O-C-N	5.00	123.62	120.07

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	C	284	SER	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	2792	0	1242	35	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	B	2792	0	1242	40	0
1	C	2792	0	1242	40	0
1	F	2792	0	1242	26	0
1	G	2792	0	1242	38	0
1	K	2792	0	1242	28	0
All	All	16752	0	7452	205	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 8.

All (205) 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:G:434:LEU:CB	1:G:481:GLY:HA2	1.79	1.13
1:C:486:SER:O	1:C:490:LYS:CB	2.07	1.01
1:B:356:PHE:HA	1:B:402:LYS:CB	1.97	0.94
1:C:482:GLY:HA2	1:C:483:SER:O	1.76	0.86
1:C:486:SER:O	1:C:490:LYS:N	2.14	0.81
1:B:436:ASN:HA	1:B:479:GLY:O	1.83	0.78
1:B:360:GLY:HA2	1:B:361:LYS:CB	2.16	0.76
1:F:169:LEU:N	1:F:170:ILE:O	2.20	0.75
1:G:169:LEU:N	1:G:170:ILE:O	2.19	0.75
1:K:169:LEU:N	1:K:170:ILE:O	2.20	0.75
1:A:169:LEU:N	1:A:170:ILE:O	2.20	0.74
1:A:485:LEU:HA	1:A:489:GLN:CB	2.16	0.74
1:B:384:SER:HA	1:B:388:LYS:CB	2.17	0.74
1:C:169:LEU:N	1:C:170:ILE:O	2.20	0.74
1:B:482:GLY:HA2	1:B:483:SER:C	2.12	0.74
1:B:169:LEU:N	1:B:170:ILE:O	2.21	0.73
1:G:482:GLY:HA2	1:G:483:SER:C	2.12	0.73
1:C:269:CYS:O	1:C:272:VAL:N	2.23	0.72
1:K:385:GLY:H	1:K:389:SER:CB	2.03	0.71
1:G:485:LEU:HA	1:G:489:GLN:CB	2.22	0.69
1:A:384:SER:O	1:A:386:CYS:N	2.25	0.69
1:A:482:GLY:H	1:A:483:SER:CB	2.05	0.69
1:G:438:SER:O	1:G:440:ALA:N	2.26	0.69
1:B:450:ASP:O	1:B:452:GLU:N	2.27	0.68
1:K:450:ASP:O	1:K:452:GLU:N	2.27	0.68
1:A:438:SER:O	1:A:440:ALA:N	2.26	0.68
1:G:450:ASP:O	1:G:452:GLU:N	2.27	0.68
1:B:438:SER:O	1:B:440:ALA:N	2.27	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:320:TYR:O	1:G:322:SER:N	2.27	0.67
1:A:450:ASP:O	1:A:452:GLU:N	2.28	0.67
1:C:450:ASP:O	1:C:452:GLU:N	2.27	0.67
1:C:438:SER:O	1:C:440:ALA:N	2.28	0.66
1:A:277:PHE:O	1:A:279:VAL:N	2.28	0.66
1:K:438:SER:O	1:K:440:ALA:N	2.27	0.66
1:F:450:ASP:O	1:F:452:GLU:N	2.28	0.66
1:B:486:SER:O	1:B:490:LYS:N	2.25	0.66
1:K:429:PRO:O	1:K:431:ASN:N	2.29	0.66
1:A:429:PRO:O	1:A:431:ASN:N	2.30	0.65
1:G:429:PRO:O	1:G:431:ASN:N	2.30	0.65
1:C:429:PRO:O	1:C:431:ASN:N	2.29	0.65
1:B:429:PRO:O	1:B:431:ASN:N	2.30	0.65
1:F:438:SER:O	1:F:440:ALA:N	2.30	0.65
1:A:482:GLY:HA2	1:A:483:SER:C	2.22	0.64
1:F:429:PRO:O	1:F:431:ASN:N	2.30	0.64
1:G:490:LYS:O	1:G:494:ALA:HB2	1.96	0.64
1:F:320:TYR:O	1:F:322:SER:N	2.31	0.64
1:C:442:ASN:O	1:C:444:THR:N	2.32	0.63
1:C:320:TYR:O	1:C:322:SER:N	2.31	0.63
1:A:320:TYR:O	1:A:322:SER:N	2.32	0.62
1:B:320:TYR:O	1:B:322:SER:N	2.32	0.62
1:A:442:ASN:O	1:A:444:THR:N	2.31	0.62
1:F:442:ASN:O	1:F:444:THR:N	2.32	0.62
1:B:334:GLU:O	1:B:336:GLU:N	2.33	0.62
1:B:442:ASN:O	1:B:444:THR:N	2.32	0.62
1:G:282:ASN:HA	1:G:283:GLU:O	1.99	0.62
1:K:334:GLU:O	1:K:336:GLU:N	2.34	0.61
1:K:320:TYR:O	1:K:322:SER:N	2.33	0.61
1:K:442:ASN:O	1:K:444:THR:N	2.34	0.61
1:G:490:LYS:O	1:G:494:ALA:CB	2.48	0.61
1:B:486:SER:O	1:B:490:LYS:CB	2.49	0.61
1:G:442:ASN:O	1:G:444:THR:N	2.33	0.60
1:B:282:ASN:HA	1:B:283:GLU:O	2.01	0.60
1:A:382:GLY:HA2	1:A:555:LEU:H	1.65	0.59
1:C:334:GLU:O	1:C:336:GLU:N	2.35	0.59
1:F:513:SER:O	1:F:515:LEU:N	2.34	0.59
1:B:352:CYS:O	1:B:353:ASN:O	2.20	0.59
1:G:334:GLU:O	1:G:336:GLU:N	2.36	0.59
1:C:485:LEU:O	1:C:490:LYS:CB	2.52	0.58
1:C:484:ASN:O	1:C:486:SER:N	2.30	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:334:GLU:O	1:F:336:GLU:N	2.36	0.58
1:C:484:ASN:C	1:C:486:SER:H	2.12	0.58
1:A:392:VAL:O	1:A:396:ILE:N	2.36	0.57
1:C:384:SER:H	1:C:388:LYS:H	1.51	0.57
1:B:513:SER:O	1:B:515:LEU:N	2.37	0.57
1:C:513:SER:O	1:C:515:LEU:N	2.38	0.57
1:A:334:GLU:O	1:A:336:GLU:N	2.36	0.57
1:K:384:SER:O	1:K:386:CYS:N	2.35	0.57
1:C:486:SER:O	1:C:490:LYS:CA	2.53	0.57
1:F:282:ASN:HA	1:F:283:GLU:O	2.04	0.56
1:G:513:SER:O	1:G:515:LEU:N	2.39	0.56
1:C:482:GLY:HA2	1:C:483:SER:C	2.29	0.56
1:K:513:SER:O	1:K:515:LEU:N	2.39	0.56
1:B:484:ASN:O	1:B:486:SER:N	2.40	0.55
1:G:384:SER:H	1:G:388:LYS:H	1.55	0.55
1:K:384:SER:HA	1:K:388:LYS:CB	2.37	0.54
1:C:482:GLY:CA	1:C:483:SER:CB	2.86	0.54
1:K:360:GLY:CA	1:K:361:LYS:CB	2.86	0.54
1:B:385:GLY:H	1:B:389:SER:CB	2.20	0.54
1:G:384:SER:C	1:G:386:CYS:H	2.15	0.54
1:F:384:SER:H	1:F:388:LYS:H	1.55	0.54
1:A:513:SER:O	1:A:515:LEU:N	2.41	0.53
1:K:416:SER:C	1:K:418:ALA:H	2.16	0.53
1:G:434:LEU:CB	1:G:481:GLY:CA	2.72	0.53
1:F:416:SER:C	1:F:418:ALA:H	2.15	0.53
1:B:360:GLY:CA	1:B:361:LYS:CB	2.86	0.52
1:G:385:GLY:HA3	1:F:486:SER:CB	2.38	0.52
1:C:416:SER:C	1:C:418:ALA:H	2.18	0.52
1:C:384:SER:C	1:C:386:CYS:H	2.17	0.52
1:B:416:SER:C	1:B:418:ALA:H	2.17	0.52
1:C:482:GLY:N	1:C:483:SER:CB	2.73	0.51
1:A:416:SER:C	1:A:418:ALA:H	2.19	0.51
1:B:384:SER:CA	1:B:388:LYS:CB	2.88	0.51
1:K:360:GLY:N	1:K:361:LYS:CB	2.73	0.51
1:C:170:ILE:O	1:C:172:TYR:N	2.39	0.50
1:C:436:ASN:CB	1:C:479:GLY:O	2.59	0.50
1:B:384:SER:HA	1:B:389:SER:H	1.76	0.50
1:G:169:LEU:H	1:G:170:ILE:C	2.19	0.50
1:G:416:SER:C	1:G:418:ALA:H	2.19	0.50
1:G:170:ILE:O	1:G:172:TYR:N	2.37	0.50
1:F:384:SER:C	1:F:386:CYS:H	2.18	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:518:GLN:O	1:G:522:LYS:N	2.46	0.49
1:A:223:LYS:O	1:A:227:LEU:N	2.46	0.49
1:F:170:ILE:O	1:F:172:TYR:N	2.40	0.49
1:A:482:GLY:N	1:A:483:SER:CB	2.73	0.49
1:G:486:SER:O	1:G:490:LYS:N	2.46	0.49
1:C:169:LEU:H	1:C:170:ILE:C	2.21	0.49
1:A:169:LEU:H	1:A:170:ILE:C	2.21	0.49
1:G:486:SER:N	1:G:490:LYS:H	2.11	0.49
1:F:223:LYS:O	1:F:227:LEU:N	2.46	0.49
1:K:282:ASN:HA	1:K:283:GLU:O	2.13	0.48
1:A:282:ASN:HA	1:A:283:GLU:O	2.14	0.48
1:B:434:LEU:O	1:B:480:ASP:O	2.31	0.48
1:B:518:GLN:O	1:B:522:LYS:N	2.47	0.48
1:C:518:GLN:O	1:C:522:LYS:N	2.46	0.48
1:F:169:LEU:H	1:F:170:ILE:C	2.21	0.48
1:A:355:SER:HA	1:A:366:LYS:H	1.78	0.48
1:K:169:LEU:H	1:K:170:ILE:C	2.21	0.48
1:A:518:GLN:O	1:A:522:LYS:N	2.46	0.48
1:K:518:GLN:O	1:K:522:LYS:N	2.47	0.48
1:A:384:SER:HA	1:A:388:LYS:CB	2.44	0.48
1:A:482:GLY:CA	1:A:483:SER:CB	2.92	0.47
1:A:46:SER:HA	1:A:47:ASP:HA	1.64	0.47
1:B:46:SER:HA	1:B:47:ASP:HA	1.59	0.47
1:A:170:ILE:O	1:A:172:TYR:N	2.38	0.47
1:G:46:SER:HA	1:G:47:ASP:HA	1.59	0.47
1:B:436:ASN:CA	1:B:479:GLY:O	2.59	0.47
1:F:518:GLN:O	1:F:522:LYS:N	2.48	0.47
1:B:171:ASN:O	1:B:173:LYS:N	2.46	0.47
1:G:557:HIS:HA	1:G:558:GLY:HA2	1.57	0.47
1:F:557:HIS:HA	1:F:558:GLY:HA2	1.56	0.47
1:B:353:ASN:O	1:B:404:GLY:HA2	2.14	0.47
1:B:169:LEU:H	1:B:170:ILE:C	2.22	0.47
1:G:171:ASN:O	1:G:173:LYS:N	2.46	0.46
1:B:170:ILE:O	1:B:172:TYR:N	2.38	0.46
1:C:221:ASN:C	1:C:223:LYS:H	2.23	0.46
1:C:223:LYS:O	1:C:227:LEU:N	2.48	0.46
1:K:557:HIS:HA	1:K:558:GLY:HA2	1.58	0.46
1:K:223:LYS:O	1:K:227:LEU:N	2.49	0.46
1:A:47:ASP:C	1:A:49:SER:H	2.24	0.46
1:B:223:LYS:O	1:B:227:LEU:N	2.49	0.45
1:C:385:GLY:HA3	1:K:486:SER:CB	2.46	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:171:ASN:O	1:A:173:LYS:N	2.48	0.45
1:A:170:ILE:C	1:A:172:TYR:H	2.23	0.45
1:A:360:GLY:CA	1:A:361:LYS:CB	2.94	0.45
1:K:170:ILE:O	1:K:172:TYR:N	2.38	0.45
1:B:557:HIS:HA	1:B:558:GLY:HA2	1.56	0.45
1:C:553:TYR:HA	1:C:562:GLU:HA	1.99	0.44
1:A:221:ASN:C	1:A:223:LYS:H	2.25	0.44
1:C:355:SER:HA	1:C:366:LYS:H	1.83	0.44
1:K:553:TYR:HA	1:K:562:GLU:HA	1.99	0.44
1:B:103:GLY:O	1:B:107:ALA:N	2.51	0.44
1:B:553:TYR:HA	1:B:562:GLU:HA	2.00	0.44
1:G:47:ASP:C	1:G:49:SER:H	2.25	0.44
1:G:170:ILE:C	1:G:172:TYR:H	2.22	0.44
1:G:355:SER:HA	1:G:366:LYS:H	1.82	0.43
1:F:47:ASP:C	1:F:49:SER:H	2.26	0.43
1:F:221:ASN:C	1:F:223:LYS:H	2.26	0.43
1:C:557:HIS:HA	1:C:558:GLY:HA2	1.57	0.43
1:K:47:ASP:C	1:K:49:SER:H	2.26	0.43
1:C:47:ASP:C	1:C:49:SER:H	2.26	0.43
1:C:483:SER:C	1:C:485:LEU:N	2.73	0.43
1:G:221:ASN:C	1:G:223:LYS:H	2.27	0.43
1:B:221:ASN:C	1:B:223:LYS:H	2.26	0.43
1:C:170:ILE:C	1:C:172:TYR:H	2.23	0.43
1:K:103:GLY:O	1:K:107:ALA:N	2.52	0.43
1:G:486:SER:C	1:G:488:GLY:N	2.73	0.43
1:C:171:ASN:O	1:C:173:LYS:N	2.47	0.42
1:B:47:ASP:C	1:B:49:SER:H	2.27	0.42
1:G:553:TYR:HA	1:G:562:GLU:HA	2.00	0.42
1:F:553:TYR:HA	1:F:562:GLU:HA	2.01	0.42
1:F:46:SER:HA	1:F:47:ASP:HA	1.58	0.42
1:F:103:GLY:O	1:F:107:ALA:N	2.52	0.42
1:A:103:GLY:O	1:A:107:ALA:N	2.53	0.42
1:G:375:GLY:HA2	1:G:534:LYS:O	2.20	0.42
1:A:385:GLY:HA2	1:A:389:SER:CB	2.49	0.42
1:A:553:TYR:HA	1:A:562:GLU:HA	2.02	0.42
1:K:171:ASN:O	1:K:173:LYS:N	2.47	0.42
1:K:385:GLY:N	1:K:389:SER:CB	2.79	0.42
1:A:557:HIS:HA	1:A:558:GLY:HA2	1.57	0.42
1:C:484:ASN:C	1:C:486:SER:N	2.73	0.42
1:G:223:LYS:O	1:G:227:LEU:N	2.52	0.42
1:F:441:LYS:HA	1:F:442:ASN:HA	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:170:ILE:C	1:B:172:TYR:H	2.23	0.41
1:K:170:ILE:C	1:K:172:TYR:H	2.24	0.41
1:B:434:LEU:C	1:B:480:ASP:O	2.63	0.41
1:G:103:GLY:O	1:G:107:ALA:N	2.54	0.41
1:B:555:LEU:HA	1:B:560:LEU:HA	2.03	0.41
1:G:555:LEU:HA	1:G:560:LEU:HA	2.02	0.41
1:F:503:PRO:HA	1:F:504:GLU:HA	1.91	0.41
1:C:269:CYS:C	1:C:271:LEU:N	2.79	0.40
1:C:503:PRO:HA	1:C:504:GLU:HA	1.90	0.40
1:C:483:SER:O	1:C:485:LEU:N	2.54	0.40
1:K:221:ASN:C	1:K:223:LYS:H	2.29	0.40
1:G:486:SER:O	1:G:488:GLY:N	2.54	0.40
1:F:375:GLY:HA2	1:F:534:LYS:O	2.22	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	562/564 (100%)	423 (75%)	89 (16%)	50 (9%)	0	8
1	B	562/564 (100%)	421 (75%)	96 (17%)	45 (8%)	1	9
1	C	562/564 (100%)	424 (75%)	86 (15%)	52 (9%)	0	8
1	F	562/564 (100%)	425 (76%)	92 (16%)	45 (8%)	1	9
1	G	562/564 (100%)	427 (76%)	89 (16%)	46 (8%)	0	9
1	K	562/564 (100%)	424 (75%)	93 (16%)	45 (8%)	1	9
All	All	3372/3384 (100%)	2544 (75%)	545 (16%)	283 (8%)	0	9

All (283) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	66	ILE
1	C	67	PRO
1	C	284	SER
1	C	321	HIS
1	C	335	GLU
1	C	354	LEU
1	C	396	ILE
1	C	430	GLN
1	C	443	ILE
1	C	451	GLU
1	C	480	ASP
1	C	502	GLU
1	C	514	ALA
1	K	66	ILE
1	K	67	PRO
1	K	335	GLU
1	K	430	GLN
1	K	443	ILE
1	K	451	GLU
1	K	502	GLU
1	K	514	ALA
1	A	66	ILE
1	A	67	PRO
1	A	278	LEU
1	A	279	VAL
1	A	335	GLU
1	A	430	GLN
1	A	443	ILE
1	A	451	GLU
1	A	502	GLU
1	A	514	ALA
1	B	66	ILE
1	B	67	PRO
1	B	335	GLU
1	B	353	ASN
1	B	396	ILE
1	B	430	GLN
1	B	443	ILE
1	B	451	GLU
1	B	485	LEU
1	B	502	GLU
1	B	514	ALA
1	G	66	ILE

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Mol	Chain	Res	Type
1	G	67	PRO
1	G	335	GLU
1	G	396	ILE
1	G	430	GLN
1	G	443	ILE
1	G	451	GLU
1	G	502	GLU
1	G	514	ALA
1	F	66	ILE
1	F	67	PRO
1	F	321	HIS
1	F	335	GLU
1	F	354	LEU
1	F	396	ILE
1	F	430	GLN
1	F	443	ILE
1	F	451	GLU
1	F	502	GLU
1	F	514	ALA
1	C	170	ILE
1	C	286	ILE
1	C	320	TYR
1	C	384	SER
1	C	437	ASP
1	C	439	ILE
1	C	447	ASP
1	C	485	LEU
1	C	510	GLN
1	K	170	ILE
1	K	286	ILE
1	K	320	TYR
1	K	321	HIS
1	K	382	GLY
1	K	403	GLU
1	K	433	TYR
1	K	439	ILE
1	K	447	ASP
1	K	510	GLN
1	A	49	SER
1	A	170	ILE
1	A	277	PHE
1	A	286	ILE

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Mol	Chain	Res	Type
1	A	320	TYR
1	A	321	HIS
1	A	354	LEU
1	A	385	GLY
1	A	433	TYR
1	A	439	ILE
1	A	447	ASP
1	A	480	ASP
1	A	510	GLN
1	B	49	SER
1	B	170	ILE
1	B	283	GLU
1	B	286	ILE
1	B	320	TYR
1	B	321	HIS
1	B	439	ILE
1	B	447	ASP
1	B	510	GLN
1	G	170	ILE
1	G	283	GLU
1	G	286	ILE
1	G	320	TYR
1	G	321	HIS
1	G	354	LEU
1	G	384	SER
1	G	433	TYR
1	G	439	ILE
1	G	447	ASP
1	G	510	GLN
1	F	49	SER
1	F	170	ILE
1	F	286	ILE
1	F	320	TYR
1	F	384	SER
1	F	433	TYR
1	F	439	ILE
1	F	447	ASP
1	F	510	GLN
1	F	512	THR
1	C	49	SER
1	C	54	ASN
1	C	352	CYS

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Mol	Chain	Res	Type
1	C	374	LYS
1	C	403	GLU
1	C	406	ILE
1	C	512	THR
1	K	49	SER
1	K	54	ASN
1	K	283	GLU
1	K	352	CYS
1	K	354	LEU
1	K	406	ILE
1	K	512	THR
1	A	54	ASN
1	A	283	GLU
1	A	285	ASP
1	A	360	GLY
1	A	403	GLU
1	A	406	ILE
1	A	512	THR
1	B	54	ASN
1	B	403	GLU
1	B	406	ILE
1	B	512	THR
1	G	49	SER
1	G	54	ASN
1	G	403	GLU
1	G	406	ILE
1	G	512	THR
1	F	54	ASN
1	F	283	GLU
1	F	352	CYS
1	F	403	GLU
1	F	406	ILE
1	C	168	LEU
1	C	417	ASN
1	C	445	PHE
1	C	471	PRO
1	C	477	LYS
1	C	486	SER
1	C	562	GLU
1	K	168	LEU
1	K	360	GLY
1	K	417	ASN

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Mol	Chain	Res	Type
1	K	445	PHE
1	K	471	PRO
1	A	168	LEU
1	A	352	CYS
1	A	399	LEU
1	A	405	GLN
1	A	417	ASN
1	A	445	PHE
1	A	471	PRO
1	A	481	GLY
1	A	562	GLU
1	B	168	LEU
1	B	352	CYS
1	B	417	ASN
1	B	433	TYR
1	B	445	PHE
1	B	471	PRO
1	G	168	LEU
1	G	352	CYS
1	G	355	SER
1	G	366	LYS
1	G	417	ASN
1	G	445	PHE
1	G	471	PRO
1	F	168	LEU
1	F	399	LEU
1	F	417	ASN
1	F	445	PHE
1	F	471	PRO
1	F	562	GLU
1	C	136	ILE
1	C	319	TYR
1	C	355	SER
1	C	366	LYS
1	C	399	LEU
1	C	405	GLN
1	C	427	TYR
1	C	544	SER
1	K	136	ILE
1	K	319	TYR
1	K	374	LYS
1	K	399	LEU

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Mol	Chain	Res	Type
1	K	405	GLN
1	K	427	TYR
1	K	562	GLU
1	A	374	LYS
1	A	383	GLU
1	A	427	TYR
1	B	136	ILE
1	B	374	LYS
1	B	399	LEU
1	B	405	GLN
1	B	427	TYR
1	B	544	SER
1	B	562	GLU
1	G	136	ILE
1	G	374	LYS
1	G	399	LEU
1	G	405	GLN
1	G	427	TYR
1	F	319	TYR
1	F	360	GLY
1	F	374	LYS
1	F	405	GLN
1	F	427	TYR
1	F	544	SER
1	C	428	ILE
1	C	484	ASN
1	K	385	GLY
1	K	397	GLY
1	K	428	ILE
1	A	136	ILE
1	A	382	GLY
1	A	428	ILE
1	B	319	TYR
1	B	428	ILE
1	G	319	TYR
1	G	360	GLY
1	G	387	GLY
1	G	428	ILE
1	G	562	GLU
1	F	136	ILE
1	F	387	GLY
1	F	428	ILE

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Mol	Chain	Res	Type
1	C	339	GLY
1	C	360	GLY
1	C	387	GLY
1	K	339	GLY
1	A	234	VAL
1	A	339	GLY
1	B	234	VAL
1	B	339	GLY
1	G	234	VAL
1	G	339	GLY
1	F	339	GLY
1	C	397	GLY
1	K	190	VAL
1	K	234	VAL
1	K	381	ILE
1	A	190	VAL
1	A	397	GLY
1	B	190	VAL
1	G	397	GLY
1	F	190	VAL
1	F	234	VAL
1	F	397	GLY
1	C	190	VAL
1	C	234	VAL
1	A	387	GLY
1	B	387	GLY
1	B	397	GLY
1	G	190	VAL
1	B	381	ILE
1	K	387	GLY

5.3.2 Protein sidechains ⓘ

There are no protein residues with a non-rotameric sidechain to report in this entry.

5.3.3 RNA ⓘ

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, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ > 2		OWAB(Å ²)	Q < 0.9
1	A	564/564 (100%)	0.64	67 (11%)	9 16	116, 316, 563, 807	0
1	B	564/564 (100%)	0.68	81 (14%)	6 14	122, 325, 612, 815	0
1	C	564/564 (100%)	0.95	108 (19%)	3 10	149, 400, 655, 817	0
1	F	564/564 (100%)	0.77	85 (15%)	5 13	157, 328, 571, 841	0
1	G	564/564 (100%)	0.83	86 (15%)	5 13	143, 309, 602, 820	0
1	K	564/564 (100%)	0.89	98 (17%)	4 11	176, 393, 663, 826	0
All	All	3384/3384 (100%)	0.79	525 (15%)	5 13	116, 342, 622, 841	0

All (525) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	52	ASP	11.3
1	B	314	TYR	9.2
1	F	269	CYS	8.5
1	K	541	HIS	8.1
1	K	52	ASP	7.8
1	C	68	VAL	7.4
1	G	482	GLY	7.1
1	C	484	ASN	7.1
1	C	512	THR	6.9
1	A	169	LEU	6.5
1	A	341	GLY	6.5
1	G	333	GLN	6.5
1	K	482	GLY	6.4
1	C	333	GLN	6.4
1	F	73	VAL	6.3
1	A	314	TYR	6.3
1	G	279	VAL	6.3
1	C	334	GLU	6.3
1	K	314	TYR	6.2

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Mol	Chain	Res	Type	RSRZ
1	K	512	THR	6.2
1	G	269	CYS	6.1
1	G	286	ILE	6.1
1	C	430	GLN	6.1
1	B	363	TYR	6.0
1	A	386	CYS	6.0
1	B	269	CYS	5.9
1	A	541	HIS	5.9
1	G	73	VAL	5.9
1	K	30	ILE	5.9
1	C	410	LYS	5.9
1	G	34	ALA	5.7
1	K	128	ASN	5.7
1	G	329	GLN	5.7
1	F	54	ASN	5.6
1	A	430	GLN	5.6
1	K	31	GLU	5.6
1	A	269	CYS	5.6
1	A	305	PRO	5.6
1	G	46	SER	5.5
1	K	430	GLN	5.5
1	F	314	TYR	5.5
1	A	333	GLN	5.5
1	B	484	ASN	5.5
1	K	173	LYS	5.5
1	B	289	ILE	5.4
1	G	541	HIS	5.4
1	B	357	GLY	5.3
1	C	43	THR	5.3
1	F	339	GLY	5.3
1	C	299	ALA	5.2
1	B	431	ASN	5.2
1	G	481	GLY	5.2
1	G	449	VAL	5.2
1	K	386	CYS	5.2
1	F	337	ASN	5.1
1	F	34	ALA	5.1
1	G	30	ILE	5.1
1	B	520	GLU	5.1
1	C	364	LEU	5.1
1	C	204	ARG	5.1
1	F	68	VAL	5.1

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Mol	Chain	Res	Type	RSRZ
1	G	484	ASN	5.0
1	F	45	ALA	5.0
1	F	44	LEU	4.8
1	A	217	THR	4.8
1	K	547	THR	4.8
1	F	52	ASP	4.7
1	F	125	THR	4.7
1	B	244	ALA	4.6
1	K	401	PRO	4.6
1	C	462	ASN	4.6
1	K	129	GLN	4.6
1	B	541	HIS	4.6
1	K	45	ALA	4.6
1	F	299	ALA	4.5
1	C	482	GLY	4.5
1	G	483	SER	4.5
1	A	340	GLU	4.5
1	G	516	ASP	4.4
1	C	167	MET	4.4
1	B	430	GLN	4.4
1	C	335	GLU	4.4
1	B	279	VAL	4.4
1	F	430	GLN	4.4
1	C	246	SER	4.4
1	K	265	GLY	4.4
1	C	64	LEU	4.4
1	F	169	LEU	4.4
1	B	401	PRO	4.4
1	F	270	VAL	4.3
1	F	520	GLU	4.3
1	K	83	TYR	4.3
1	G	291	SER	4.3
1	K	86	ARG	4.3
1	B	386	CYS	4.3
1	G	282	ASN	4.3
1	K	357	GLY	4.2
1	C	46	SER	4.2
1	K	27	VAL	4.2
1	K	431	ASN	4.2
1	C	125	THR	4.2
1	C	291	SER	4.2
1	G	173	LYS	4.2

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Mol	Chain	Res	Type	RSRZ
1	A	367	ASN	4.1
1	B	240	ALA	4.1
1	B	540	ALA	4.1
1	B	477	LYS	4.1
1	G	171	ASN	4.1
1	F	521	ALA	4.1
1	A	204	ARG	4.1
1	G	340	GLU	4.0
1	G	509	ASP	4.0
1	G	314	TYR	4.0
1	A	54	ASN	4.0
1	C	200	ALA	4.0
1	G	31	GLU	4.0
1	C	265	GLY	4.0
1	F	397	GLY	4.0
1	A	383	GLU	3.9
1	F	48	PHE	3.9
1	C	264	GLU	3.9
1	F	512	THR	3.9
1	B	366	LYS	3.9
1	F	335	GLU	3.9
1	F	431	ASN	3.9
1	C	344	SER	3.9
1	C	292	THR	3.9
1	C	67	PRO	3.9
1	G	292	THR	3.8
1	A	166	LEU	3.8
1	B	266	ILE	3.8
1	A	542	ARG	3.8
1	F	389	SER	3.8
1	C	138	GLY	3.8
1	A	484	ASN	3.8
1	A	339	GLY	3.8
1	K	299	ALA	3.8
1	F	316	ASP	3.8
1	C	542	ARG	3.8
1	K	549	CYS	3.8
1	G	542	ARG	3.7
1	F	218	ASN	3.7
1	K	545	THR	3.7
1	F	55	LYS	3.7
1	C	431	ASN	3.7

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Mol	Chain	Res	Type	RSRZ
1	G	285	ASP	3.7
1	C	44	LEU	3.7
1	K	28	SER	3.7
1	K	539	ILE	3.7
1	A	431	ASN	3.7
1	A	73	VAL	3.7
1	A	558	GLY	3.7
1	C	52	ASP	3.7
1	B	415	ALA	3.7
1	C	257	ALA	3.6
1	G	339	GLY	3.6
1	A	270	VAL	3.6
1	F	70	GLU	3.6
1	K	440	ALA	3.6
1	G	299	ALA	3.6
1	K	540	ALA	3.6
1	A	125	THR	3.6
1	B	383	GLU	3.6
1	C	472	GLN	3.6
1	G	289	ILE	3.6
1	K	330	ASN	3.5
1	F	46	SER	3.5
1	B	247	LYS	3.5
1	G	477	LYS	3.5
1	F	43	THR	3.5
1	G	401	PRO	3.5
1	F	312	THR	3.5
1	F	171	ASN	3.5
1	C	442	ASN	3.5
1	K	337	ASN	3.5
1	B	358	TYR	3.5
1	B	486	SER	3.4
1	G	462	ASN	3.4
1	K	315	HIS	3.4
1	K	232	ASP	3.4
1	K	348	GLU	3.4
1	F	483	SER	3.4
1	G	32	THR	3.4
1	G	208	MET	3.4
1	A	129	GLN	3.4
1	A	344	SER	3.4
1	F	367	ASN	3.4

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Mol	Chain	Res	Type	RSRZ
1	C	268	PHE	3.4
1	A	449	VAL	3.4
1	B	265	GLY	3.4
1	G	357	GLY	3.4
1	B	283	GLU	3.4
1	C	192	ILE	3.3
1	C	443	ILE	3.3
1	C	412	GLU	3.3
1	B	73	VAL	3.3
1	G	429	PRO	3.3
1	K	383	GLU	3.3
1	B	489	GLN	3.3
1	G	129	GLN	3.3
1	C	247	LYS	3.3
1	K	329	GLN	3.3
1	C	367	ASN	3.2
1	B	361	LYS	3.2
1	F	75	PHE	3.2
1	C	444	THR	3.2
1	F	72	ILE	3.2
1	G	342	LYS	3.2
1	F	429	PRO	3.2
1	B	287	SER	3.2
1	C	300	LEU	3.2
1	B	542	ARG	3.2
1	K	270	VAL	3.2
1	G	204	ARG	3.2
1	F	156	GLU	3.2
1	G	369	ASN	3.2
1	C	48	PHE	3.2
1	B	232	ASP	3.2
1	B	346	ASN	3.1
1	A	53	ARG	3.1
1	K	96	LEU	3.1
1	C	269	CYS	3.1
1	F	472	GLN	3.1
1	K	542	ARG	3.1
1	F	69	PHE	3.1
1	F	484	ASN	3.1
1	K	29	PHE	3.1
1	B	312	THR	3.1
1	K	190	VAL	3.1

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Mol	Chain	Res	Type	RSRZ
1	C	178	LEU	3.0
1	C	521	ALA	3.0
1	K	380	PHE	3.0
1	K	92	TYR	3.0
1	A	332	ARG	3.0
1	C	266	ILE	3.0
1	F	170	ILE	3.0
1	K	360	GLY	3.0
1	K	335	GLU	3.0
1	G	28	SER	3.0
1	G	459	LYS	3.0
1	C	248	ALA	3.0
1	K	400	LYS	3.0
1	A	312	THR	3.0
1	C	369	ASN	3.0
1	F	265	GLY	3.0
1	K	91	ALA	3.0
1	C	117	LEU	3.0
1	B	280	LEU	3.0
1	B	433	TYR	3.0
1	F	41	PHE	3.0
1	A	384	SER	2.9
1	B	34	ALA	2.9
1	B	414	ASN	2.9
1	G	25	VAL	2.9
1	G	280	LEU	2.9
1	C	477	LYS	2.9
1	K	433	TYR	2.9
1	G	433	TYR	2.9
1	B	521	ALA	2.9
1	F	528	TYR	2.9
1	C	118	ASN	2.9
1	F	15	ASN	2.9
1	C	262	TYR	2.9
1	C	501	LEU	2.9
1	A	415	ALA	2.9
1	G	430	GLN	2.9
1	B	380	PHE	2.9
1	C	193	LEU	2.9
1	G	162	LEU	2.9
1	C	70	GLU	2.9
1	B	364	LEU	2.9

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Mol	Chain	Res	Type	RSRZ
1	G	478	VAL	2.9
1	G	547	THR	2.9
1	F	247	LYS	2.9
1	K	460	GLN	2.9
1	F	10	SER	2.8
1	K	516	ASP	2.8
1	F	510	GLN	2.8
1	C	397	GLY	2.8
1	A	482	GLY	2.8
1	A	334	GLU	2.8
1	K	341	GLY	2.8
1	F	474	VAL	2.8
1	C	531	SER	2.8
1	G	246	SER	2.8
1	C	218	ASN	2.8
1	K	291	SER	2.8
1	B	122	GLU	2.8
1	C	440	ALA	2.8
1	F	353	ASN	2.8
1	K	397	GLY	2.8
1	A	397	GLY	2.8
1	K	333	GLN	2.8
1	A	59	SER	2.8
1	F	515	LEU	2.8
1	A	55	LYS	2.7
1	B	440	ALA	2.7
1	B	497	ARG	2.7
1	C	185	ASN	2.7
1	A	165	ALA	2.7
1	K	266	ILE	2.7
1	B	52	ASP	2.7
1	G	382	GLY	2.7
1	G	431	ASN	2.7
1	C	243	GLU	2.7
1	C	520	GLU	2.7
1	B	512	THR	2.7
1	C	267	GLY	2.7
1	B	382	GLY	2.7
1	C	91	ALA	2.7
1	C	329	GLN	2.7
1	G	108	ILE	2.7
1	A	450	ASP	2.7

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Mol	Chain	Res	Type	RSRZ
1	K	446	GLY	2.7
1	A	299	ALA	2.7
1	F	358	TYR	2.7
1	A	459	LYS	2.7
1	B	276	VAL	2.7
1	F	517	THR	2.7
1	B	488	GLY	2.7
1	C	409	ASP	2.7
1	C	72	ILE	2.7
1	K	25	VAL	2.7
1	F	142	ASN	2.6
1	C	510	GLN	2.6
1	K	510	GLN	2.6
1	B	378	ILE	2.6
1	B	70	GLU	2.6
1	C	358	TYR	2.6
1	A	139	GLU	2.6
1	B	360	GLY	2.6
1	A	509	ASP	2.6
1	B	243	GLU	2.6
1	F	99	ARG	2.6
1	A	477	LYS	2.6
1	B	509	ASP	2.6
1	K	548	GLN	2.6
1	A	357	GLY	2.6
1	K	68	VAL	2.6
1	K	79	LEU	2.5
1	C	205	GLU	2.5
1	C	423	GLN	2.5
1	K	62	GLU	2.5
1	A	45	ALA	2.5
1	C	210	ASN	2.5
1	B	282	ASN	2.5
1	K	477	LYS	2.5
1	F	80	ILE	2.5
1	F	519	SER	2.5
1	C	45	ALA	2.5
1	G	52	ASP	2.5
1	A	337	ASN	2.5
1	C	366	LYS	2.5
1	K	483	SER	2.5
1	C	13	ASP	2.5

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Mol	Chain	Res	Type	RSRZ
1	K	410	LYS	2.5
1	C	422	ARG	2.5
1	A	135	SER	2.5
1	C	374	LYS	2.5
1	K	111	LYS	2.5
1	G	270	VAL	2.5
1	C	152	LEU	2.5
1	C	429	PRO	2.5
1	K	126	GLN	2.5
1	F	268	PHE	2.5
1	B	337	ASN	2.5
1	G	506	LEU	2.4
1	G	167	MET	2.4
1	K	382	GLY	2.4
1	K	90	ASN	2.4
1	B	462	ASN	2.4
1	G	224	PHE	2.4
1	B	43	THR	2.4
1	F	50	TYR	2.4
1	C	59	SER	2.4
1	A	288	GLY	2.4
1	K	286	ILE	2.4
1	F	266	ILE	2.4
1	K	384	SER	2.4
1	K	471	PRO	2.4
1	F	401	PRO	2.4
1	A	121	TYR	2.4
1	C	486	SER	2.4
1	K	11	LYS	2.4
1	C	207	ALA	2.4
1	A	220	ASN	2.4
1	K	32	THR	2.4
1	B	517	THR	2.4
1	C	194	SER	2.4
1	K	268	PHE	2.4
1	G	232	ASP	2.4
1	F	315	HIS	2.4
1	F	542	ARG	2.4
1	C	249	ASN	2.4
1	A	510	GLN	2.4
1	G	454	LEU	2.4
1	G	510	GLN	2.4

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Mol	Chain	Res	Type	RSRZ
1	A	385	GLY	2.4
1	A	446	GLY	2.4
1	G	43	THR	2.4
1	G	479	GLY	2.4
1	C	51	PHE	2.4
1	C	75	PHE	2.4
1	K	531	SER	2.4
1	B	449	VAL	2.4
1	K	459	LYS	2.4
1	B	308	ASN	2.4
1	G	485	LEU	2.4
1	C	446	GLY	2.3
1	K	340	GLU	2.3
1	A	69	PHE	2.3
1	A	514	ALA	2.3
1	G	512	THR	2.3
1	G	551	LYS	2.3
1	G	305	PRO	2.3
1	C	345	PHE	2.3
1	B	171	ASN	2.3
1	B	423	GLN	2.3
1	F	267	GLY	2.3
1	B	284	SER	2.3
1	K	509	ASP	2.3
1	A	429	PRO	2.3
1	B	286	ILE	2.3
1	G	520	GLU	2.3
1	B	472	GLN	2.3
1	G	118	ASN	2.3
1	F	31	GLU	2.3
1	G	29	PHE	2.3
1	C	259	PRO	2.3
1	C	488	GLY	2.3
1	A	265	GLY	2.3
1	F	382	GLY	2.3
1	F	509	ASP	2.3
1	F	516	ASP	2.3
1	K	415	ALA	2.3
1	C	551	LYS	2.3
1	B	551	LYS	2.3
1	G	190	VAL	2.3
1	K	517	THR	2.3

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Mol	Chain	Res	Type	RSRZ
1	B	313	SER	2.3
1	B	362	LYS	2.3
1	K	22	VAL	2.3
1	K	449	VAL	2.3
1	C	260	ARG	2.3
1	C	62	GLU	2.3
1	C	164	TYR	2.3
1	F	500	TYR	2.3
1	C	71	ILE	2.3
1	K	145	THR	2.2
1	K	551	LYS	2.2
1	B	429	PRO	2.2
1	G	272	VAL	2.2
1	G	480	ASP	2.2
1	F	336	GLU	2.2
1	G	172	TYR	2.2
1	F	296	PHE	2.2
1	K	267	GLY	2.2
1	F	485	LEU	2.2
1	K	544	SER	2.2
1	A	516	ASP	2.2
1	G	383	GLU	2.2
1	G	460	GLN	2.2
1	B	30	ILE	2.2
1	K	39	MET	2.2
1	F	172	TYR	2.2
1	C	142	ASN	2.2
1	B	167	MET	2.2
1	B	339	GLY	2.2
1	F	415	ALA	2.2
1	F	540	ALA	2.2
1	K	465	HIS	2.2
1	A	372	ILE	2.2
1	A	198	LYS	2.2
1	C	314	TYR	2.2
1	B	552	VAL	2.2
1	K	34	ALA	2.2
1	K	46	SER	2.2
1	G	395	ILE	2.2
1	C	129	GLN	2.2
1	C	258	VAL	2.2
1	G	534	LYS	2.2

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Mol	Chain	Res	Type	RSRZ
1	K	287	SER	2.2
1	G	287	SER	2.2
1	C	253	GLU	2.1
1	G	521	ALA	2.1
1	F	47	ASP	2.1
1	K	197	ILE	2.1
1	B	277	PHE	2.1
1	F	414	ASN	2.1
1	A	512	THR	2.1
1	B	476	THR	2.1
1	F	497	ARG	2.1
1	C	244	ALA	2.1
1	G	206	GLU	2.1
1	F	246	SER	2.1
1	C	296	PHE	2.1
1	A	399	LEU	2.1
1	G	151	LEU	2.1
1	B	69	PHE	2.1
1	G	176	LEU	2.1
1	C	295	ILE	2.1
1	C	121	TYR	2.1
1	C	339	GLY	2.1
1	K	375	GLY	2.1
1	B	485	LEU	2.1
1	K	231	GLU	2.1
1	G	194	SER	2.1
1	F	340	GLU	2.1
1	K	511	ALA	2.1
1	K	514	ALA	2.1
1	C	502	GLU	2.1
1	K	520	GLU	2.1
1	F	531	SER	2.1
1	B	270	VAL	2.1
1	G	70	GLU	2.0
1	F	283	GLU	2.0
1	A	154	MET	2.0
1	B	168	LEU	2.0
1	F	307	ALA	2.0
1	C	346	ASN	2.0
1	A	330	ASN	2.0
1	B	129	GLN	2.0
1	A	560	LEU	2.0

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Mol	Chain	Res	Type	RSRZ
1	F	501	LEU	2.0
1	K	344	SER	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.