



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 8, 2026 – 09:56 AM UTC

PDB ID : 9UU0 / pdb_00009uu0
Title : The structure of Bacteroides fragilis T6SS effector BteO
Authors : He, J.; Gao, X.
Deposited on : 2025-05-05
Resolution : 2.72 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

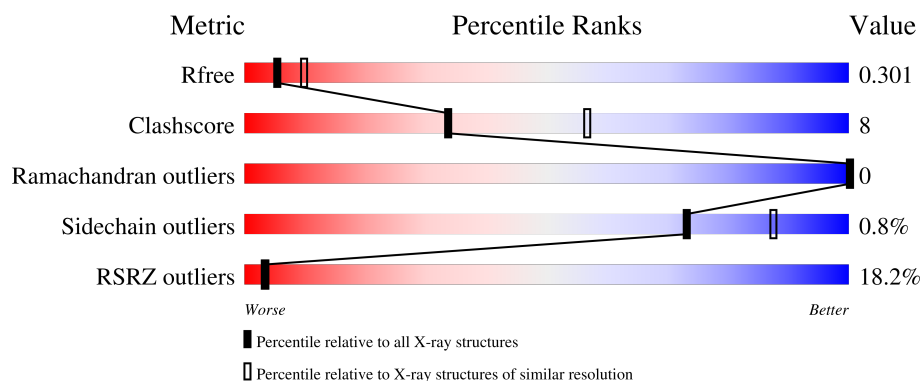
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.72 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	4348 (2.74-2.70)
Clashscore	190562	4665 (2.74-2.70)
Ramachandran outliers	187476	4584 (2.74-2.70)
Sidechain outliers	187428	4585 (2.74-2.70)
RSRZ outliers	180081	4348 (2.74-2.70)

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	590	15% 83% 16%
1	B	590	21% 84% 16%

2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 9234 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 Maltose/maltodextrin-binding periplasmic protein, *Bacteroides fragilis* T6SS effector.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	590	Total	C	N	O	S	0	0	0
			4606	2926	787	882	11			
1	B	590	Total	C	N	O	S	0	0	0
			4606	2926	787	882	11			

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1	MET	-	initiating methionine	UNP P0AEX9
A	83	ALA	ASP	conflict	UNP P0AEX9
A	84	ALA	LYS	conflict	UNP P0AEX9
A	173	ALA	GLU	conflict	UNP P0AEX9
A	174	ALA	ASN	conflict	UNP P0AEX9
A	240	ALA	LYS	conflict	UNP P0AEX9
B	1	MET	-	initiating methionine	UNP P0AEX9
B	83	ALA	ASP	conflict	UNP P0AEX9
B	84	ALA	LYS	conflict	UNP P0AEX9
B	173	ALA	GLU	conflict	UNP P0AEX9
B	174	ALA	ASN	conflict	UNP P0AEX9
B	240	ALA	LYS	conflict	UNP P0AEX9

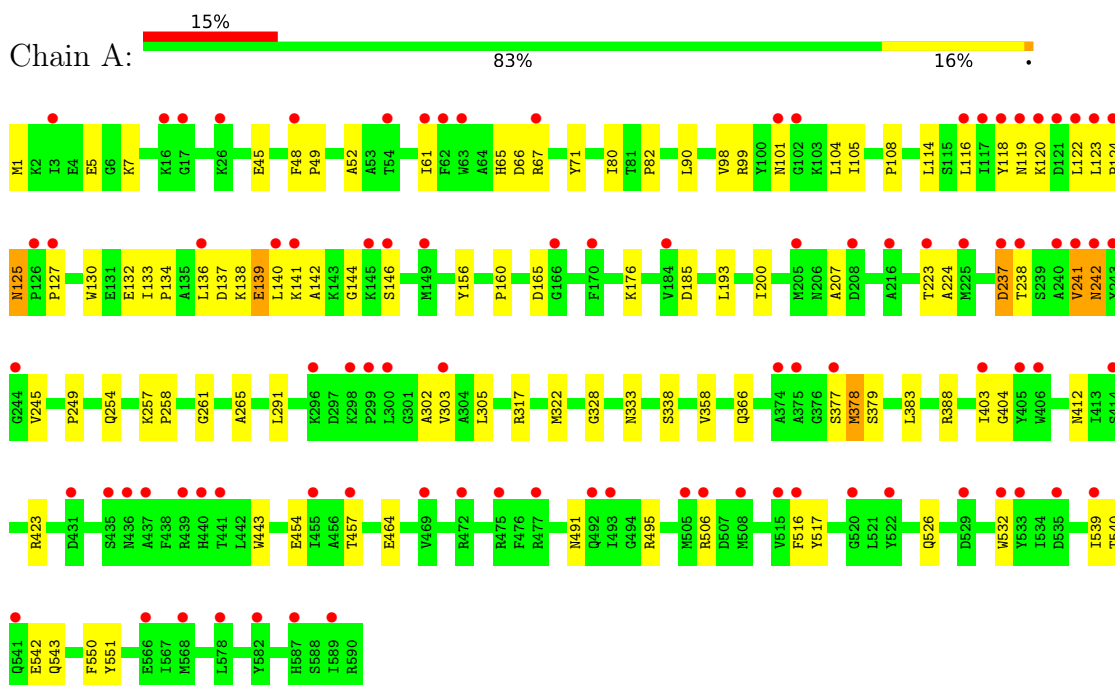
- Molecule 2 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	12	Total	O	0	0
			12	12		
2	B	10	Total	O	0	0
			10	10		

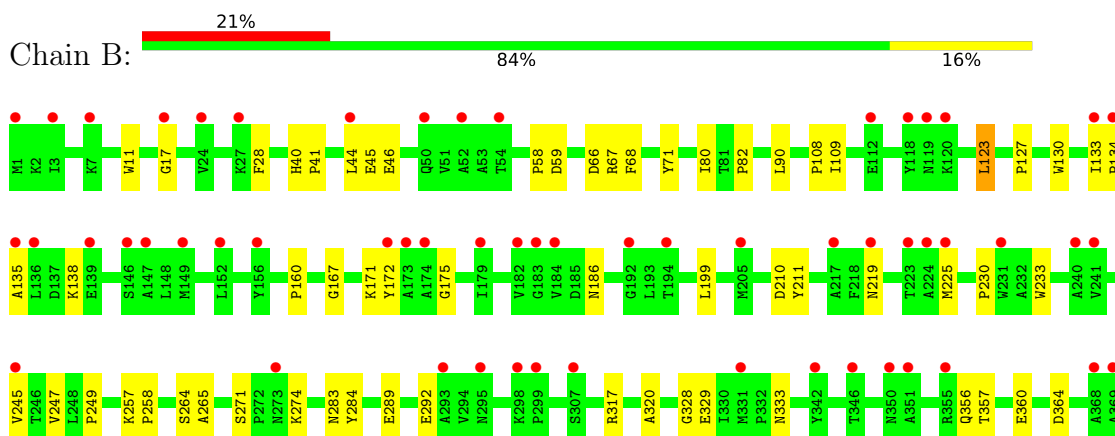
3 Residue-property plots

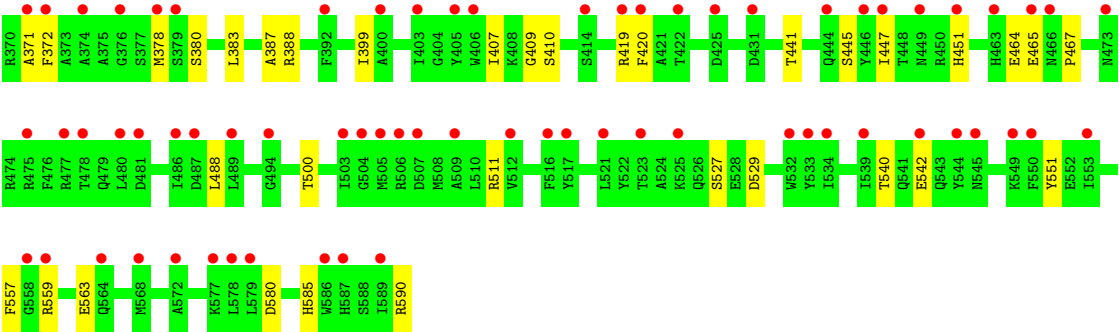
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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: Maltose/maltodextrin-binding periplasmic protein, *Bacteroides fragilis* T6SS effector



- Molecule 1: Maltose/maltodextrin-binding periplasmic protein, *Bacteroides fragilis* T6SS effector





4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	234.12Å 63.46Å 113.61Å 90.00° 110.79° 90.00°	Depositor
Resolution (Å)	56.26 – 2.72 56.26 – 2.72	Depositor EDS
% Data completeness (in resolution range)	99.0 (56.26-2.72) 99.1 (56.26-2.72)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.50 (at 2.73Å)	Xtriage
Refinement program	PHENIX 1.17.1_3660	Depositor
R, R_{free}	0.275 , 0.297 0.278 , 0.301	Depositor DCC
R_{free} test set	2089 reflections (4.93%)	wwPDB-VP
Wilson B-factor (Å ²)	61.3	Xtriage
Anisotropy	0.540	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 55.6	EDS
L-test for twinning ²	$\langle L \rangle = 0.50$, $\langle L^2 \rangle = 0.34$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.91	EDS
Total number of atoms	9234	wwPDB-VP
Average B, all atoms (Å ²)	82.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.22% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality [i](#)

5.1 Standard geometry [i](#)

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.28	0/4708	0.47	3/6378 (0.0%)
1	B	0.14	0/4708	0.33	1/6378 (0.0%)
All	All	0.22	0/9416	0.41	4/12756 (0.0%)

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	242	ASN	N-CA-C	8.41	122.99	111.39
1	A	378	MET	N-CA-C	-6.86	104.78	113.02
1	A	241	VAL	N-CA-C	-5.24	107.61	112.43
1	B	17	GLY	N-CA-C	-5.09	103.03	110.97

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	4606	0	4532	78	0
1	B	4606	0	4532	71	0
2	A	12	0	0	0	0
2	B	10	0	0	9	0
All	All	9234	0	9064	141	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 (141) 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:B:465:GLU:HG2	2:B:607:HOH:O	1.63	0.99
1:A:120:LYS:HE2	1:B:138:LYS:NZ	1.92	0.85
1:A:122:LEU:HD22	1:A:224:ALA:HB1	1.57	0.83
1:B:357:THR:HB	2:B:604:HOH:O	1.81	0.80
1:A:90:LEU:HD23	1:A:108:PRO:HG2	1.71	0.73
1:B:172:TYR:CZ	1:B:175:GLY:HA2	2.25	0.71
1:B:357:THR:CB	2:B:604:HOH:O	2.36	0.69
1:A:101:ASN:OD1	1:A:176:LYS:NZ	2.26	0.68
1:B:380:SER:HA	1:B:383:LEU:HD12	1.77	0.66
1:A:1:MET:HE1	1:A:5:GLU:HB2	1.78	0.66
1:B:559:ARG:HB3	1:B:563:GLU:HG3	1.79	0.65
1:B:80:ILE:HG22	1:B:82:PRO:HD3	1.78	0.65
1:A:80:ILE:HG22	1:A:82:PRO:HD3	1.78	0.64
1:A:241:VAL:HG12	1:A:241:VAL:O	1.98	0.64
1:A:120:LYS:HE2	1:B:138:LYS:HZ1	1.60	0.62
1:B:388:ARG:NH2	1:B:464:GLU:O	2.33	0.61
1:A:517:TYR:HA	1:A:539:ILE:HG22	1.82	0.61
1:A:120:LYS:HA	1:A:123:LEU:HB2	1.82	0.61
1:B:585:HIS:HA	2:B:603:HOH:O	2.01	0.60
1:B:219:ASN:ND2	2:B:602:HOH:O	2.35	0.60
1:A:120:LYS:HE2	1:B:138:LYS:CE	2.33	0.59
1:A:120:LYS:NZ	1:B:135:ALA:HA	2.18	0.59
1:B:407:ILE:HB	1:B:410:SER:HB2	1.84	0.58
1:B:11:TRP:HB3	1:B:44:LEU:HD11	1.86	0.58
1:A:165:ASP:HA	1:A:254:GLN:OE1	2.04	0.58
1:A:539:ILE:HD11	1:A:543:GLN:HB3	1.86	0.57
1:A:122:LEU:O	1:A:123:LEU:C	2.48	0.57
1:A:291:LEU:HD13	1:A:303:VAL:HG11	1.87	0.57
1:B:172:TYR:OH	1:B:175:GLY:HA2	2.04	0.57
1:A:124:PRO:O	1:A:125:ASN:C	2.46	0.56
1:A:516:PHE:CE2	1:A:539:ILE:HB	2.40	0.56
1:A:257:LYS:HA	1:A:328:GLY:HA2	1.87	0.56
1:A:404:GLY:HA3	1:A:412:ASN:HD22	1.72	0.55
1:A:99:ARG:HG3	1:A:104:LEU:HD23	1.89	0.54
1:A:193:LEU:HD23	1:A:358:VAL:HG13	1.90	0.54
1:B:257:LYS:HA	1:B:328:GLY:HA2	1.90	0.53
1:A:146:SER:OG	1:A:223:THR:HB	2.08	0.53
1:A:388:ARG:NH2	1:A:464:GLU:O	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:303:VAL:HG12	1:A:305:LEU:H	1.74	0.52
1:A:48:PHE:CE1	1:A:61:ILE:HD11	2.44	0.52
1:A:132:GLU:O	1:A:136:LEU:HG	2.09	0.52
1:B:123:LEU:HD21	1:B:127:PRO:HD3	1.91	0.52
1:B:372:PHE:HB3	1:B:378:MET:HE1	1.92	0.52
1:B:245:VAL:HG12	1:B:320:ALA:HB3	1.92	0.51
1:B:230:PRO:HA	1:B:233:TRP:CE2	2.46	0.51
1:B:356:GLN:NE2	1:B:364:ASP:OD2	2.44	0.50
1:B:45:GLU:O	1:B:71:TYR:OH	2.28	0.50
1:B:133:ILE:HG13	1:B:134:PRO:HD3	1.92	0.50
1:B:500:THR:HG1	1:B:511:ARG:HH12	1.57	0.50
1:B:245:VAL:HB	1:B:317:ARG:HA	1.94	0.49
1:A:120:LYS:HE2	1:B:138:LYS:HE2	1.93	0.49
1:A:120:LYS:HZ2	1:B:135:ALA:HA	1.77	0.49
1:B:130:TRP:CD1	1:B:249:PRO:HB2	2.47	0.49
1:B:527:SER:OG	1:B:529:ASP:OD1	2.23	0.49
1:B:540:THR:HG22	1:B:542:GLU:H	1.76	0.49
1:A:49:PRO:HG3	1:A:71:TYR:CE1	2.48	0.49
1:A:237:ASP:O	1:A:238:THR:C	2.55	0.49
1:A:123:LEU:HB3	1:A:124:PRO:HD3	1.95	0.49
1:B:28:PHE:HA	1:B:284:TYR:HE2	1.77	0.48
1:A:66:ASP:HA	1:A:333:ASN:HA	1.96	0.48
1:A:45:GLU:HB2	1:A:67:ARG:CZ	2.43	0.48
1:B:90:LEU:HD23	1:B:108:PRO:HG2	1.96	0.48
1:B:133:ILE:N	1:B:134:PRO:HD2	2.29	0.48
1:A:383:LEU:O	1:A:388:ARG:NH1	2.45	0.47
1:A:338:SER:OG	1:A:378:MET:HE3	2.15	0.47
1:B:66:ASP:HA	1:B:333:ASN:HA	1.97	0.47
1:A:137:ASP:O	1:A:138:LYS:C	2.58	0.47
1:A:491:ASN:O	1:A:495:ARG:HG3	2.15	0.47
1:A:138:LYS:O	1:A:139:GLU:C	2.58	0.47
1:B:257:LYS:HE2	1:B:329:GLU:HB2	1.96	0.47
1:B:371:ALA:HB1	1:B:387:ALA:HB2	1.98	0.46
1:A:200:ILE:HD13	1:A:207:ALA:HB2	1.97	0.46
1:A:540:THR:OG1	1:A:543:GLN:HG3	2.15	0.46
1:B:172:TYR:CE2	1:B:175:GLY:HA2	2.50	0.46
1:B:441:THR:O	1:B:445:SER:OG	2.30	0.46
1:A:130:TRP:CD1	1:A:249:PRO:HB2	2.51	0.45
1:A:423:ARG:HD3	1:A:550:PHE:CE1	2.51	0.45
1:A:241:VAL:O	1:A:241:VAL:CG1	2.64	0.45
1:B:11:TRP:CD2	1:B:58:PRO:HG3	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:45:GLU:HG2	1:B:46:GLU:HG3	1.98	0.45
1:B:133:ILE:HG13	1:B:134:PRO:CD	2.46	0.45
1:A:302:ALA:HB1	1:A:322:MET:HE2	1.99	0.45
1:A:185:ASP:HB3	1:A:366:GLN:OE1	2.17	0.45
1:B:271:SER:O	1:B:274:LYS:HG3	2.16	0.45
1:A:539:ILE:HG12	1:A:543:GLN:HB2	1.99	0.44
1:B:399:ILE:HG23	1:B:451:HIS:CE1	2.52	0.44
1:A:127:PRO:HG3	1:A:136:LEU:CD1	2.47	0.44
1:B:167:GLY:HA2	1:B:186:ASN:HD21	1.82	0.44
1:A:146:SER:OG	1:A:223:THR:CB	2.66	0.44
1:A:516:PHE:CD2	1:A:539:ILE:HB	2.52	0.44
1:A:454:GLU:HA	1:A:457:THR:HG22	1.99	0.44
1:B:41:PRO:HD2	1:B:44:LEU:HD12	1.99	0.43
1:A:61:ILE:O	1:A:265:ALA:HA	2.18	0.43
1:A:116:LEU:HD12	1:A:249:PRO:HD3	2.00	0.43
1:A:120:LYS:HZ2	1:B:135:ALA:CB	2.31	0.43
1:A:90:LEU:CD2	1:A:108:PRO:HG2	2.45	0.43
1:B:59:ASP:OD1	1:B:271:SER:OG	2.33	0.43
1:A:49:PRO:HG3	1:A:71:TYR:HE1	1.84	0.43
1:A:98:VAL:O	1:A:105:ILE:HG12	2.19	0.43
1:B:467:PRO:HA	1:B:488:LEU:HD11	2.01	0.43
1:B:40:HIS:O	1:B:40:HIS:ND1	2.52	0.43
1:A:7:LYS:HE2	1:A:7:LYS:HB3	1.92	0.43
1:A:138:LYS:HA	1:A:141:LYS:HB2	2.01	0.43
1:A:140:LEU:O	1:A:141:LYS:C	2.62	0.43
1:B:585:HIS:CB	2:B:603:HOH:O	2.67	0.42
1:A:48:PHE:CE1	1:A:52:ALA:HB2	2.54	0.42
1:B:210:ASP:OD1	1:B:211:TYR:N	2.47	0.42
1:B:28:PHE:HA	1:B:284:TYR:CE2	2.54	0.42
1:A:119:ASN:OD1	1:A:120:LYS:N	2.49	0.42
1:A:142:ALA:C	1:A:144:GLY:H	2.27	0.42
1:A:127:PRO:HG3	1:A:136:LEU:HD12	2.00	0.42
1:A:242:ASN:HD22	1:A:242:ASN:N	2.17	0.42
1:B:289:GLU:O	1:B:292:GLU:HG3	2.20	0.42
1:A:133:ILE:N	1:A:134:PRO:HD2	2.34	0.42
1:A:245:VAL:HB	1:A:317:ARG:HA	2.02	0.42
1:A:516:PHE:CE2	1:A:539:ILE:HD12	2.55	0.42
1:B:127:PRO:HG2	1:B:225:MET:HE1	2.02	0.42
1:B:283:ASN:C	1:B:284:TYR:HD1	2.28	0.42
1:B:580:ASP:HB3	1:B:590:ARG:HG2	2.01	0.42
1:B:66:ASP:OD1	1:B:67:ARG:N	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:160:PRO:HG3	1:B:258:PRO:HA	2.00	0.41
1:B:447:ILE:HA	1:B:451:HIS:HD2	1.83	0.41
1:B:68:PHE:CE2	1:B:264:SER:HB2	2.55	0.41
1:B:133:ILE:HD11	1:B:199:LEU:HD21	2.03	0.41
1:A:65:HIS:HE1	1:A:261:GLY:HA2	1.84	0.41
1:B:419:ARG:HD2	1:B:557:PHE:O	2.20	0.41
1:A:118:TYR:HB2	1:A:122:LEU:HD21	2.03	0.41
1:A:114:LEU:HD13	1:A:156:TYR:HE2	1.86	0.41
1:A:142:ALA:C	1:A:144:GLY:N	2.78	0.41
1:A:120:LYS:NZ	1:B:135:ALA:CA	2.81	0.41
1:A:160:PRO:HG3	1:A:258:PRO:HA	2.03	0.40
1:A:506:ARG:HD2	1:A:551:TYR:O	2.21	0.40
1:A:542:GLU:O	1:A:543:GLN:C	2.64	0.40
1:B:409:GLY:HA2	1:B:419:ARG:HH22	1.86	0.40
1:B:420:PHE:O	1:B:551:TYR:OH	2.37	0.40
1:A:403:ILE:HG23	1:A:443:TRP:HE1	1.86	0.40
1:B:360:GLU:OE1	2:B:601:HOH:O	2.22	0.40
1:A:526:GLN:HB2	1:A:532:TRP:CZ3	2.56	0.40
1:B:109:ILE:HD11	1:B:265:ALA:HB2	2.03	0.40
1:B:585:HIS:ND1	2:B:603:HOH:O	2.37	0.40
1:B:585:HIS:CA	2:B:603:HOH:O	2.65	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	588/590 (100%)	567 (96%)	21 (4%)	0	100	100
1	B	588/590 (100%)	580 (99%)	8 (1%)	0	100	100
All	All	1176/1180 (100%)	1147 (98%)	29 (2%)	0	100	100

There are no Ramachandran outliers to report.

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	472/472 (100%)	467 (99%)	5 (1%)	65	84
1	B	472/472 (100%)	469 (99%)	3 (1%)	78	90
All	All	944/944 (100%)	936 (99%)	8 (1%)	73	87

All (8) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	125	ASN
1	A	139	GLU
1	A	237	ASP
1	A	377	SER
1	A	379	SER
1	B	123	LEU
1	B	171	LYS
1	B	247	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (9) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	153	GLN
1	A	204	HIS
1	A	242	ASN
1	A	356	GLN
1	A	436	ASN
1	A	451	HIS
1	B	396	HIS
1	B	444	GLN
1	B	451	HIS

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 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	590/590 (100%)	1.24	90 (15%) 5 5	44, 75, 111, 153	0
1	B	590/590 (100%)	1.42	125 (21%) 2 2	51, 83, 126, 153	0
All	All	1180/1180 (100%)	1.33	215 (18%) 3 3	44, 79, 120, 153	0

All (215) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	121	ASP	5.8
1	B	451	HIS	5.3
1	B	579	LEU	4.8
1	B	17	GLY	4.7
1	B	342	TYR	4.6
1	B	550	PHE	4.6
1	A	244	GLY	4.3
1	B	465	GLU	4.2
1	A	241	VAL	4.2
1	B	481	ASP	4.1
1	A	439	ARG	4.1
1	A	493	ILE	4.1
1	A	122	LEU	4.1
1	B	1	MET	4.0
1	B	503	ILE	4.0
1	B	146	SER	3.9
1	B	225	MET	3.9
1	A	516	PHE	3.9
1	B	405	TYR	3.8
1	A	123	LEU	3.8
1	B	578	LEU	3.7
1	B	378	MET	3.7
1	B	240	ALA	3.7
1	B	174	ALA	3.6

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Mol	Chain	Res	Type	RSRZ
1	B	371	ALA	3.6
1	A	225	MET	3.6
1	B	542	GLU	3.6
1	B	422	THR	3.6
1	A	243	TYR	3.6
1	B	355	ARG	3.5
1	B	559	ARG	3.5
1	A	205	MET	3.5
1	A	184	VAL	3.5
1	B	587	HIS	3.5
1	A	61	ILE	3.5
1	B	549	LYS	3.4
1	A	303	VAL	3.4
1	A	3	ILE	3.4
1	B	533	TYR	3.4
1	B	299	PRO	3.3
1	B	182	VAL	3.3
1	A	118	TYR	3.3
1	A	223	THR	3.2
1	B	449	ASN	3.2
1	B	223	THR	3.2
1	A	48	PHE	3.2
1	B	298	LYS	3.1
1	B	480	LEU	3.1
1	A	403	ILE	3.1
1	B	553	ILE	3.1
1	A	120	LYS	3.1
1	B	447	ILE	3.1
1	B	589	ILE	3.1
1	B	477	ARG	3.1
1	B	112	GLU	3.0
1	B	400	ALA	3.0
1	B	572	ALA	3.0
1	A	140	LEU	3.0
1	B	414	SER	3.0
1	A	441	THR	3.0
1	A	146	SER	2.9
1	B	27	LYS	2.9
1	B	172	TYR	2.9
1	B	376	GLY	2.9
1	B	372	PHE	2.9
1	A	492	GLN	2.9

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Mol	Chain	Res	Type	RSRZ
1	B	431	ASP	2.9
1	B	504	GLY	2.9
1	A	101	ASN	2.9
1	B	219	ASN	2.9
1	B	486	ILE	2.8
1	A	102	GLY	2.8
1	B	478	THR	2.8
1	A	435	SER	2.8
1	B	494	GLY	2.8
1	B	173	ALA	2.8
1	B	293	ALA	2.8
1	B	369	ALA	2.8
1	A	582	TYR	2.8
1	A	127	PRO	2.7
1	A	141	LYS	2.7
1	A	535	ASP	2.7
1	B	147	ALA	2.7
1	B	446	TYR	2.7
1	A	242	ASN	2.7
1	A	431	ASP	2.7
1	A	117	ILE	2.7
1	A	149	MET	2.7
1	A	238	THR	2.7
1	A	240	ALA	2.7
1	B	539	ILE	2.7
1	A	578	LEU	2.7
1	A	587	HIS	2.7
1	A	532	TRP	2.7
1	A	126	PRO	2.7
1	B	295	ASN	2.6
1	B	205	MET	2.6
1	A	166	GLY	2.6
1	A	16	LYS	2.6
1	A	145	LYS	2.5
1	A	440	HIS	2.5
1	B	184	VAL	2.5
1	B	586	TRP	2.5
1	B	179	ILE	2.5
1	B	120	LYS	2.5
1	A	568	MET	2.5
1	B	374	ALA	2.5
1	B	505	MET	2.5

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Mol	Chain	Res	Type	RSRZ
1	B	516	PHE	2.5
1	A	26	LYS	2.5
1	A	63	TRP	2.5
1	B	425	ASP	2.5
1	B	487	ASP	2.5
1	A	299	PRO	2.5
1	A	533	TYR	2.5
1	B	224	ALA	2.5
1	A	136	LEU	2.4
1	A	589	ILE	2.4
1	B	136	LEU	2.4
1	B	307	SER	2.4
1	A	508	MET	2.4
1	A	216	ALA	2.4
1	A	437	ALA	2.4
1	B	475	ARG	2.4
1	A	539	ILE	2.4
1	A	505	MET	2.4
1	A	515	VAL	2.4
1	B	24	VAL	2.4
1	A	67	ARG	2.4
1	A	457	THR	2.4
1	B	44	LEU	2.4
1	B	133	ILE	2.4
1	B	231	TRP	2.4
1	B	507	ASP	2.4
1	B	241	VAL	2.4
1	B	368	ALA	2.4
1	B	521	LEU	2.4
1	B	54	THR	2.4
1	B	346	THR	2.4
1	A	208	ASP	2.4
1	A	520	GLY	2.4
1	B	183	GLY	2.4
1	B	245	VAL	2.4
1	A	62	PHE	2.4
1	B	379	SER	2.3
1	A	375	ALA	2.3
1	B	544	TYR	2.3
1	A	475	ARG	2.3
1	B	152	LEU	2.3
1	A	237	ASP	2.3

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Mol	Chain	Res	Type	RSRZ
1	A	472	ARG	2.3
1	A	17	GLY	2.3
1	B	50	GLN	2.3
1	A	469	VAL	2.3
1	A	300	LEU	2.3
1	B	139	GLU	2.3
1	B	419	ARG	2.3
1	B	3	ILE	2.2
1	B	135	ALA	2.2
1	B	403	ILE	2.2
1	B	577	LYS	2.2
1	B	194	THR	2.2
1	B	118	TYR	2.2
1	B	444	GLN	2.2
1	B	406	TRP	2.2
1	B	420	PHE	2.2
1	B	568	MET	2.2
1	A	374	ALA	2.2
1	A	119	ASN	2.2
1	B	156	TYR	2.2
1	A	529	ASP	2.2
1	B	192	GLY	2.2
1	B	506	ARG	2.2
1	B	466	ASN	2.2
1	B	7	LYS	2.2
1	B	525	LYS	2.2
1	B	534	ILE	2.2
1	A	170	PHE	2.2
1	B	509	ALA	2.1
1	A	296	LYS	2.1
1	A	522	TYR	2.1
1	B	392	PHE	2.1
1	A	406	TRP	2.1
1	A	477	ARG	2.1
1	A	506	ARG	2.1
1	B	523	THR	2.1
1	A	116	LEU	2.1
1	B	149	MET	2.1
1	B	331	MET	2.1
1	B	52	ALA	2.1
1	B	217	ALA	2.1
1	A	298	LYS	2.1

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Mol	Chain	Res	Type	RSRZ
1	B	134	PRO	2.1
1	A	541	GLN	2.1
1	A	436	ASN	2.1
1	A	455	ILE	2.1
1	A	566	GLU	2.1
1	B	351	ALA	2.1
1	A	54	THR	2.1
1	B	564	GLN	2.1
1	B	119	ASN	2.1
1	B	273	ASN	2.1
1	B	473	ASN	2.1
1	B	512	VAL	2.1
1	A	377	SER	2.0
1	A	414	SER	2.0
1	B	532	TRP	2.0
1	B	489	LEU	2.0
1	B	350	ASN	2.0
1	A	405	TYR	2.0
1	B	517	TYR	2.0
1	A	124	PRO	2.0
1	B	463	HIS	2.0
1	B	545	ASN	2.0
1	B	558	GLY	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.