WORLDWIDE PDB

PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report ⓘ

Dec 22, 2025 – 07:08 PM JST

PDB ID	:	9LZA / pdb_00009lza
Title	:	Reductive-half reaction intermediate of copper amine oxidase from Arthrobacter globiformis captured with long-a-axis diffraction data by mix-and-inject serial crystallography at 25-ms time delay
Authors	:	Murakawa, T.; Okajima, T.
Deposited on	:	2025-02-21
Resolution	:	1.87 Å(reported)

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

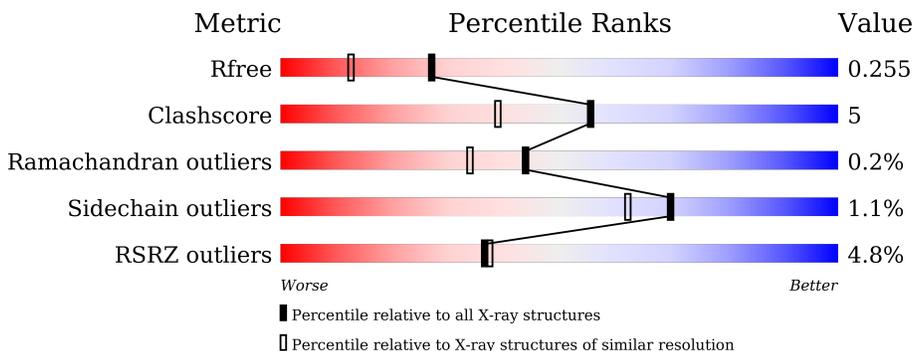|		
MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.011 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.47

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 1.87 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	Percentile Ranks	Value
Rfree		0.255
Clashscore		5
Ramachandran outliers		0.2%
Sidechain outliers		1.1%
RSRZ outliers		4.8%

Worse — *Better*

▌Percentile relative to all X-ray structures

▯Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R$_{free}$	164625	1090 (1.88-1.88)
Clashscore	180529	1144 (1.88-1.88)
Ramachandran outliers	177936	1135 (1.88-1.88)
Sidechain outliers	177891	1135 (1.88-1.88)
RSRZ outliers	164620	1090 (1.88-1.88)

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 <=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	621	6% / 88% / 12%
1	B	621	3% / 90% / 10%

2 Entry composition ⓘ

There are 4 unique types of molecules in this entry. The entry contains 10732 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 Phenylethylamine oxidase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	621	Total	C	N	O	S	0	3	0
			4895	3092	859	935	9			
1	B	621	Total	C	N	O	S	0	4	0
			4893	3093	856	933	11			

- Molecule 2 is COPPER (II) ION (CCD ID: CU) (formula: Cu).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	1	Total	Cu	0	0
			1	1		
2	B	1	Total	Cu	0	0
			1	1		

- Molecule 3 is SODIUM ION (CCD ID: NA) (formula: Na).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	1	Total	Na	0	0
			1	1		
3	B	1	Total	Na	0	0
			1	1		

- Molecule 4 is water.

| Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	461	Total	O	0	0
			461	461		
4	B	479	Total	O	0	1
			479	479		

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: Phenylethylamine oxidase

Chain A:

• Molecule 1: Phenylethylamine oxidase

Chain B:
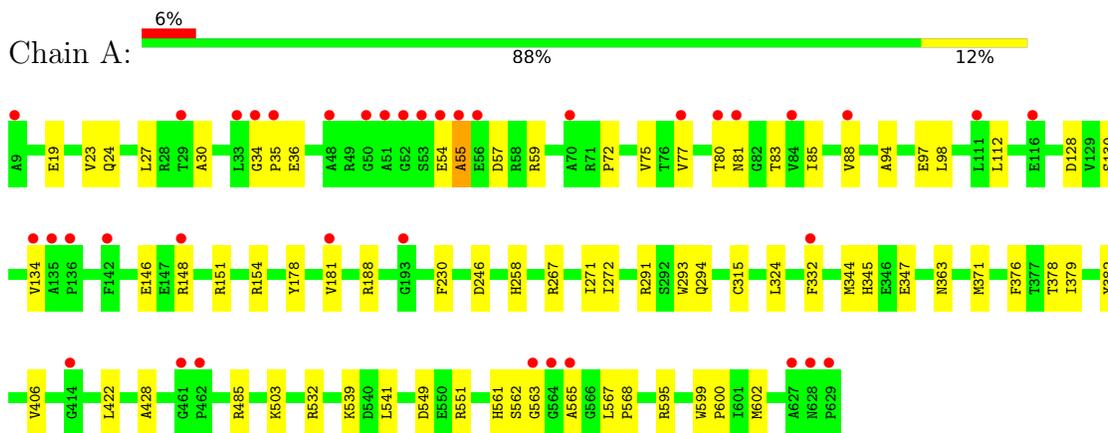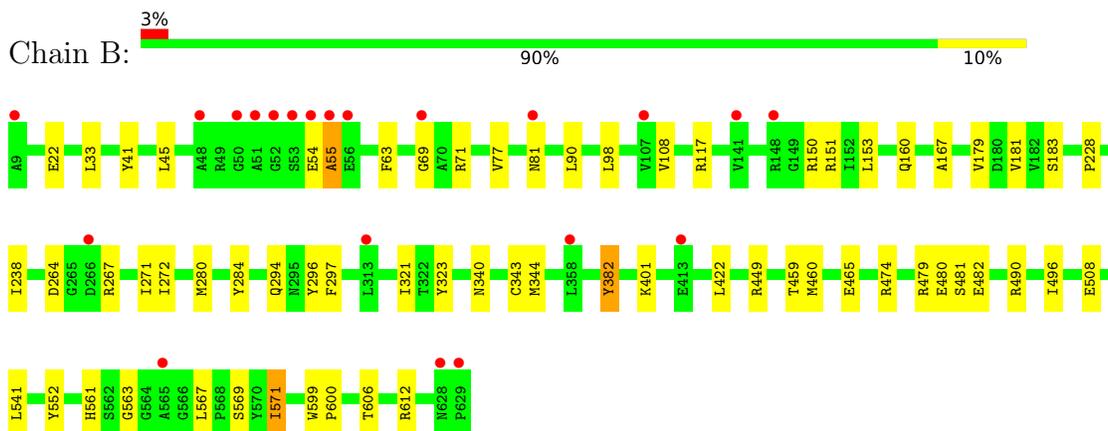
4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	193.77Å 64.95Å 158.70Å 90.00° 116.97° 90.00°	Depositor
Resolution (Å)	29.94 – 1.87 29.94 – 1.87	Depositor EDS
% Data completeness (in resolution range)	99.9 (29.94-1.87) 99.9 (29.94-1.87)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.26 (at 1.87Å)	Xtriage
Refinement program	PHENIX (1.19.2_4158: ???)	Depositor
R, R_{free}	0.218 , 0.255 0.219 , 0.255	Depositor DCC
R_{free} test set	18517 reflections (4.86%)	wwPDB-VP
Wilson B-factor (Å²)	24.6	Xtriage
Anisotropy	0.643	Xtriage
Bulk solvent k_{sol}(e/Å³), B_{sol}(Å²)	0.34 , 50.2	EDS
L-test for twinning[2]	$< |L| > = 0.45, < L^2 > = 0.28$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	10732	wwPDB-VP
Average B, all atoms (Å²)	32.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 82.27 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 2.9049e-07. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

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[1]Intensities estimated from amplitudes.
[2]Theoretical values of $< |L| >$, $< L^2 >$ 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: NA, CU, TPQ

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	0/5004	0.75	1/6815 (0.0%)
1	B	0.59	0/5013	0.74	0/6825
All	All	0.58	0/10017	0.74	1/13640 (0.0%)

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

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

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	595	ARG	CG-CD-NE	-5.48	99.94	112.00

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	B	151	ARG	Sidechain

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	4895	0	4713	51	0
1	B	4893	0	4723	40	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
4	A	461	0	0	20	1
4	B	479	0	0	11	1
All	All	10732	0	9436	89	2

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 5.

All (89) 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:A:561:HIS:ND1	1:A:562:SER:O	2.07	0.86
1:A:57:ASP:HA	1:A:80:THR:HG21	1.65	0.78
1:B:481:SER:O	4:B:801:HOH:O	2.06	0.72
1:A:36:GLU:OE1	4:A:901:HOH:O	2.07	0.72
1:A:146:GLU:OE2	1:A:188:ARG:NH1	2.28	0.66
1:A:151:ARG:O	4:A:902:HOH:O	2.12	0.66
1:A:230:PHE:CD2	1:A:371:MET:HE3	2.31	0.65
1:A:54:GLU:HG3	1:A:55:ALA:H	1.61	0.65
1:B:153:LEU:HD12	1:B:181:VAL:HG11	1.77	0.65
1:B:54:GLU:HG3	1:B:55:ALA:H	1.63	0.64
1:B:449:ARG:NH2	4:B:808:HOH:O	2.25	0.64
1:A:539:LYS:NZ	4:A:910:HOH:O	2.30	0.63
1:A:151:ARG:HB3	4:A:902:HOH:O	2.00	0.61
1:A:599:TRP:CD2	1:A:600:PRO:HA	2.37	0.60
1:A:422:LEU:HD11	1:A:428:ALA:HB2	1.83	0.60
1:A:568:PRO:O	4:A:905:HOH:O	2.17	0.60
1:B:490:ARG:NH2	4:B:820:HOH:O	2.35	0.60
1:B:422:LEU:HD13	1:B:599:TRP:HB2	1.84	0.59
1:A:35:PRO:HD2	4:A:901:HOH:O	2.03	0.58
1:B:71:ARG:HD3	1:B:90:LEU:O	2.04	0.58
1:B:599:TRP:CD2	1:B:600:PRO:HA	2.39	0.58
1:B:460:MET:HE3	1:B:465:GLU:O	2.04	0.58
1:A:181:VAL:HG22	4:A:902:HOH:O	2.03	0.57
1:A:324:LEU:HG	1:A:344:MET:HE2	1.85	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:34:GLY:HA3	4:A:901:HOH:O	2.05	0.56
1:A:83:THR:N	4:A:916:HOH:O	2.34	0.55
1:B:567:LEU:O	1:B:571[A]:ILE:HG23	2.07	0.55
1:A:406:VAL:HG13	1:A:602:MET:CE	2.37	0.54
1:A:24:GLN:NE2	1:A:332:PHE:O	2.39	0.53
1:B:271:ILE:HG22	1:B:272:ILE:HG13	1.89	0.53
1:B:561:HIS:CD2	1:B:563:GLY:H	2.27	0.53
1:B:160:GLN:HG3	1:B:167:ALA:HB2	1.90	0.52
1:A:551:ARG:HD2	4:A:997:HOH:O	2.10	0.52
1:A:406:VAL:CG1	1:A:602:MET:HE1	2.39	0.52
1:A:532:ARG:HB3	1:A:563:GLY:HA3	1.91	0.51
1:A:246:ASP:HB2	1:A:258:HIS:HB2	1.91	0.51
1:A:271:ILE:HG22	1:A:272:ILE:HG13	1.93	0.51
1:A:267:ARG:NH1	4:A:904:HOH:O	2.17	0.51
1:B:33:LEU:O	4:B:806:HOH:O	2.20	0.50
1:B:69:GLY:O	4:B:805:HOH:O	2.19	0.50
1:B:264:ASP:CG	1:B:267:ARG:HH21	2.19	0.49
1:B:63:PHE:HB3	1:B:98:LEU:HD22	1.94	0.49
1:B:150:ARG:HH12	1:B:183:SER:HB3	1.78	0.49
1:B:108:VAL:HG22	1:B:179:VAL:HG21	1.94	0.49
1:B:284:TYR:OH	1:B:382:TPQ:O4	2.28	0.49
1:B:612:ARG:HD3	4:B:1035:HOH:O	2.12	0.48
1:A:94:ALA:O	1:B:22:GLU:HG3	2.13	0.48
1:A:97:GLU:OE2	4:A:906:HOH:O	2.20	0.47
1:A:503:LYS:NZ	4:A:919:HOH:O	2.35	0.47
1:B:150:ARG:HG3	4:B:1076:HOH:O	2.14	0.47
1:A:345:HIS:CD2	1:A:347:GLU:HG3	2.51	0.46
1:A:485:ARG:NH2	4:A:921:HOH:O	2.47	0.46
1:A:72:PRO:HB2	1:A:98:LEU:HD11	1.97	0.46
1:B:280:MET:O	1:B:297:PHE:HA	2.14	0.46
1:B:238:ILE:HD11	1:B:344:MET:HE1	1.98	0.46
1:A:181:VAL:CG2	4:A:902:HOH:O	2.63	0.46
1:A:549:ASP:OD2	4:A:907:HOH:O	2.21	0.46
1:A:565:ALA:HA	4:A:961:HOH:O	2.15	0.45
1:B:117:ARG:NH2	4:B:804:HOH:O	2.19	0.45
1:B:561:HIS:HD2	1:B:563:GLY:H	1.64	0.45
1:B:480:GLU:HB3	1:B:571[B]:ILE:HD13	1.99	0.45
1:A:59:ARG:NH1	1:A:85:ILE:HG21	2.32	0.44
1:A:293:TRP:CD1	1:A:293:TRP:H	2.35	0.44
1:A:406:VAL:HG13	1:A:602:MET:HE1	1.99	0.44
1:A:81:ASN:HB2	4:A:916:HOH:O	2.16	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:228:PRO:HG3	4:B:859:HOH:O	2.18	0.44
1:A:154:ARG:HD3	1:A:178:TYR:CE1	2.53	0.43
1:A:363:ASN:ND2	4:A:942:HOH:O	2.51	0.43
1:A:19:GLU:O	1:A:23:VAL:HG23	2.18	0.43
1:B:41:TYR:HB3	1:B:63:PHE:CD2	2.54	0.43
1:B:401:LYS:HG2	1:B:606:THR:HG22	2.01	0.43
1:A:230:PHE:CE2	1:A:371:MET:HE3	2.54	0.42
1:A:378:THR:C	1:A:379:ILE:HD13	2.44	0.42
1:B:508:GLU:OE2	4:B:807:HOH:O	2.21	0.42
1:A:128:ASP:OD2	1:A:130:SER:OG	2.37	0.42
1:A:406:VAL:HG12	1:A:602:MET:HE1	2.00	0.42
1:B:321:ILE:CG2	1:B:343[A]:CYS:HB2	2.49	0.42
1:B:552:TYR:OH	4:B:802:HOH:O	2.11	0.42
1:A:30:ALA:HB2	4:A:937:HOH:O	2.19	0.42
1:A:148:ARG:NH1	1:B:81:ASN:HD21	2.18	0.41
1:A:112:LEU:HD12	1:A:134[B]:VAL:HG21	2.02	0.41
1:B:45:LEU:HD23	1:B:45:LEU:HA	1.90	0.41
1:B:284:TYR:CD1	1:B:294:GLN:HG2	2.55	0.41
1:A:567:LEU:HA	1:A:567:LEU:HD23	1.81	0.41
1:A:27:LEU:HD21	1:A:75:VAL:HG11	2.04	0.40
1:A:291:ARG:HB3	1:A:294:GLN:HE21	1.86	0.40
1:B:323:TYR:CE1	1:B:340:ASN:HB3	2.56	0.40
1:B:474:ARG:CZ	1:B:496:ILE:HD13	2.50	0.40
1:B:479:ARG:O	1:B:482:GLU:HB3	2.22	0.40

All (2) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:1066:HOH:O	4:A:1295:HOH:O[2_556]	2.09	0.11
4:B:1099:HOH:O	4:B:1240:HOH:O[2_555]	2.17	0.03

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	621/621 (100%)	590 (95%)	30 (5%)	1 (0%)	44	34
1	B	622/621 (100%)	602 (97%)	19 (3%)	1 (0%)	44	34
All	All	1243/1242 (100%)	1192 (96%)	49 (4%)	2 (0%)	44	34

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	55	ALA
1	B	55	ALA

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	516/514 (100%)	511 (99%)	5 (1%)	73	65
1	B	518/514 (101%)	511 (99%)	7 (1%)	62	52
All	All	1034/1028 (101%)	1022 (99%)	12 (1%)	70	58

All (12) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	77	VAL
1	A	88	VAL
1	A	315	CYS
1	A	376	PHE
1	A	541	LEU
1	B	77	VAL
1	B	296	TYR
1	B	459	THR
1	B	541	LEU
1	B	569	SER
1	B	571[A]	ILE

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Mol	Chain	Res	Type
1	B	571[B]	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	294	GLN
1	A	306	GLN
1	A	363	ASN
1	A	458	GLN
1	B	81	ASN
1	B	418	ASN
1	B	458	GLN
1	B	561	HIS

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

2 non-standard protein/DNA/RNA residues are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#|Z| > 2$	Counts	RMSZ	$\#|Z| > 2$
1	TPQ	B	382	1	13,14,15	0.72	0	15,19,21	2.01	3 (20%)
1	TPQ	A	382	1	13,14,15	0.77	0	15,19,21	1.51	2 (13%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	TPQ	B	382	1	-	0/5/22/24	0/1/1/1
1	TPQ	A	382	1	-	2/5/22/24	0/1/1/1

There are no bond length outliers.

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	382	TPQ	C6-C1-C2	5.65	122.98	118.64
1	A	382	TPQ	C6-C1-C2	4.11	121.80	118.64
1	B	382	TPQ	CB-CA-C	-3.74	104.46	111.47
1	B	382	TPQ	C3-C4-C5	2.41	123.75	121.26
1	A	382	TPQ	CB-CA-C	-2.15	107.43	111.47

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	382	TPQ	N-CA-CB-C1
1	A	382	TPQ	O-C-CA-CB

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	B	382	TPQ	1	0

5.5   Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6   Ligand geometry ⓘ

Of 4 ligands modelled in this entry, 4 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 (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(Å²)	Q<0.9
1	A	620/621 (99%)	0.37	38 (6%)	28	29	14, 31, 54, 141	3 (0%)
1	B	620/621 (99%)	0.15	21 (3%)	48	51	15, 29, 48, 135	4 (0%)
All	All	1240/1242 (99%)	0.26	59 (4%)	36	37	14, 30, 52, 141	7 (0%)

All (59) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	135[A]	ALA	7.3
1	A	134[A]	VAL	6.6
1	A	136[A]	PRO	6.2
1	B	51	ALA	5.7
1	A	51	ALA	5.1
1	B	53	SER	4.7
1	B	55	ALA	4.3
1	A	52	GLY	4.2
1	A	563	GLY	4.0
1	A	55	ALA	3.8
1	A	629	PRO	3.8
1	A	148	ARG	3.8
1	B	148	ARG	3.8
1	A	53	SER	3.7
1	B	50	GLY	3.7
1	A	565	ALA	3.6
1	B	54	GLU	3.6
1	B	629	PRO	3.5
1	A	80	THR	3.4
1	B	628	ASN	3.3
1	A	29	THR	3.3
1	B	141	VAL	3.2
1	A	628	ASN	3.2
1	B	52	GLY	3.1

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Mol	Chain	Res	Type	RSRZ
1	A	81	ASN	3.0
1	A	35	PRO	2.9
1	A	116	GLU	2.9
1	A	9	ALA	2.9
1	A	48	ALA	2.9
1	A	54	GLU	2.7
1	A	564	GLY	2.6
1	A	56	GLU	2.5
1	A	111	LEU	2.5
1	A	50	GLY	2.5
1	A	414	GLY	2.4
1	A	332	PHE	2.4
1	A	627	ALA	2.3
1	B	56	GLU	2.3
1	B	266	ASP	2.3
1	B	565	ALA	2.2
1	A	461	GLY	2.2
1	A	84	VAL	2.2
1	B	107	VAL	2.2
1	A	34	GLY	2.2
1	B	9	ALA	2.2
1	B	48	ALA	2.2
1	B	69	GLY	2.2
1	B	413	GLU	2.2
1	A	462	PRO	2.2
1	A	70	ALA	2.1
1	A	193	GLY	2.1
1	B	81	ASN	2.1
1	A	77	VAL	2.1
1	A	88	VAL	2.1
1	A	181	VAL	2.1
1	A	33	LEU	2.0
1	A	142	PHE	2.0
1	B	313	LEU	2.0
1	B	358	LEU	2.0

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

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, 95th 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(Å^2)	Q<0.9
1	TPQ	A	382	14/15	0.96	0.06	19,23,31,32	0
1	TPQ	B	382	14/15	0.96	0.06	20,25,30,36	0

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, 95th 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(Å^2)	Q<0.9
2	CU	B	701	1/1	0.98	0.03	20,20,20,20	0
3	NA	A	702	1/1	0.98	0.11	21,21,21,21	0
2	CU	A	701	1/1	0.99	0.02	19,19,19,19	0
3	NA	B	702	1/1	0.99	0.05	17,17,17,17	0

6.5 Other polymers ⓘ

There are no such residues in this entry.