



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 2, 2026 – 03:48 AM UTC

PDB ID : 2V0Y / pdb_00002v0y
Title : Crystal structure of apo C298S tryptophanase from E.coli
Authors : Kogan, A.; Gdalevsky, G.Y.; Cohen-Luria, R.; Goldgur, Y.; Parola, A.H.; Almog, O.
Deposited on : 2007-05-21
Resolution : 2.00 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
Mogul : 2022.3.0, CSD as543be (2022)
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

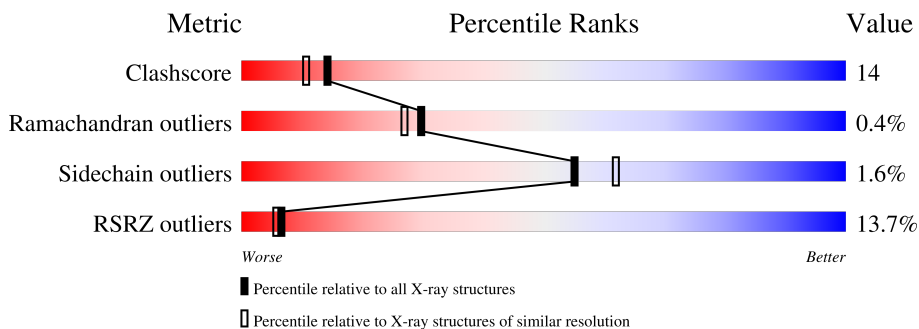
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.00 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))
Clashscore	190562	11152 (2.00-2.00)
Ramachandran outliers	187476	11031 (2.00-2.00)
Sidechain outliers	187428	11029 (2.00-2.00)
RSRZ outliers	180081	10067 (2.00-2.00)

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	467	

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 4201 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 TRYPTOPHANASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	467	Total	C	N	O	S	0	0	0
			3679	2346	620	691	22			

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	298	SER	CYS	engineered mutation	UNP P0A853

- Molecule 2 is CHLORIDE ION (CCD ID: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	1	Total	Cl	0	0
			1	1		

- Molecule 3 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	1	Total	Mg	0	0
			1	1		

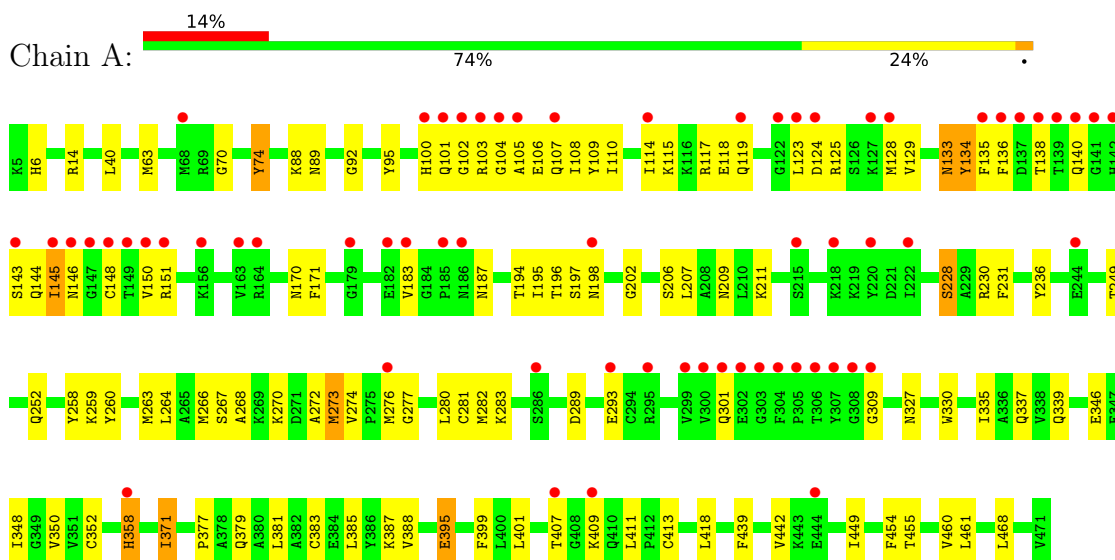
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	520	Total	O	0	0
			520	520		

3 Residue-property plots [i](#)

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

• Molecule 1: TRYPTOPHANASE



4 Data and refinement statistics

Property	Value	Source
Space group	F 2 2 2	Depositor
Cell constants a, b, c, α , β , γ	120.48Å 118.77Å 171.53Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	80.00 – 2.00 80.00 – 2.00	Depositor EDS
% Data completeness (in resolution range)	99.6 (80.00-2.00) 99.6 (80.00-2.00)	Depositor EDS
R_{merge}	0.12	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.63 (at 1.98Å)	Xtriage
Refinement program	CNS 1.1	Depositor
R, R_{free}	0.215 , 0.257 0.230 , (Not available)	Depositor DCC
R_{free} test set	No test flags present.	wwPDB-VP
Wilson B-factor (Å ²)	24.2	Xtriage
Anisotropy	0.212	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.35 , 61.5	EDS
L-test for twinning ²	$\langle L \rangle = 0.51$, $\langle L^2 \rangle = 0.34$	Xtriage
Estimated twinning fraction	0.013 for -k,-h,-l	Xtriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	4201	wwPDB-VP
Average B, all atoms (Å ²)	30.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.23% 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

Bond lengths and bond angles in the following residue types are not validated in this section: CL, CME, MG

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	0.39	1/3746 (0.0%)	0.91	17/5060 (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	A	0	1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	74	TYR	CZ-OH	9.65	1.58	1.38

All (17) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	455	THR	N-CA-C	-8.79	103.39	114.56
1	A	105	ALA	N-CA-C	-7.88	104.82	114.75
1	A	70	GLY	N-CA-C	6.66	120.60	111.54
1	A	145	ILE	N-CA-C	-6.58	101.04	109.80
1	A	259	LYS	N-CA-C	-6.46	104.66	112.54
1	A	388	VAL	N-CA-C	6.39	117.17	110.72
1	A	371	ILE	N-CA-C	5.97	113.80	107.76
1	A	273	MET	N-CA-C	5.88	120.03	112.86
1	A	267	SER	N-CA-C	-5.77	100.27	109.96
1	A	74	TYR	CE1-CZ-OH	-5.59	103.14	119.90
1	A	228	SER	N-CA-C	5.45	122.41	110.80
1	A	266	MET	N-CA-C	5.45	117.37	108.76

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	283	LYS	N-CA-C	5.36	116.81	110.97
1	A	454	PHE	N-CA-C	5.26	117.51	110.35
1	A	413	CYS	CA-C-N	5.20	125.00	119.28
1	A	413	CYS	C-N-CA	5.20	125.00	119.28
1	A	379	GLN	N-CA-C	-5.08	105.83	112.23

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	74	TYR	Sidechain

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	3679	0	3651	104	0
2	A	1	0	0	0	0
3	A	1	0	0	0	0
4	A	520	0	0	11	0
All	All	4201	0	3651	104	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 14.

All (104) 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:171:PHE:H	1:A:209:ASN:HD21	1.17	0.93
1:A:133:ASN:HD21	1:A:194:THR:H	1.19	0.90
1:A:133:ASN:HD22	1:A:133:ASN:H	1.23	0.85
1:A:140:GLN:HG3	1:A:150:VAL:HG21	1.56	0.85
1:A:327:ASN:HD22	1:A:330:TRP:H	1.26	0.82
1:A:171:PHE:H	1:A:209:ASN:ND2	1.79	0.78
1:A:170:ASN:HD21	1:A:206:SER:H	1.29	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:145:ILE:O	1:A:146:ASN:HB2	1.86	0.75
1:A:133:ASN:HD22	1:A:133:ASN:N	1.88	0.72
1:A:102:GLY:C	1:A:104:GLY:H	1.98	0.72
1:A:407:THR:HG21	1:A:409:LYS:HD3	1.72	0.71
1:A:115:LYS:HG2	1:A:119:GLN:HE21	1.55	0.71
1:A:196:THR:OG1	1:A:358:HIS:HE1	1.75	0.70
1:A:6:HIS:HE1	1:A:337:GLN:HE21	1.44	0.65
1:A:136:PHE:CE1	1:A:198:ASN:HB2	2.33	0.64
1:A:228:SER:HB2	1:A:231:PHE:HB3	1.78	0.63
1:A:103:ARG:HD3	1:A:138:THR:OG1	1.99	0.61
1:A:107:GLN:HG2	4:A:2180:HOH:O	2.00	0.61
1:A:125:ARG:HA	1:A:128:MET:HE2	1.83	0.60
1:A:327:ASN:ND2	1:A:330:TRP:H	1.99	0.59
1:A:460:VAL:HG22	1:A:461:LEU:HG	1.83	0.58
1:A:100:HIS:C	1:A:102:GLY:H	2.12	0.58
1:A:195:ILE:HG13	1:A:195:ILE:O	2.05	0.57
1:A:145:ILE:O	1:A:146:ASN:CB	2.53	0.57
1:A:144:GLN:HA	1:A:148:CYS:O	2.05	0.56
1:A:230:ARG:HH22	1:A:270:LYS:HZ3	1.52	0.56
1:A:118:GLU:HA	1:A:123:LEU:H	1.71	0.55
1:A:125:ARG:CA	1:A:128:MET:HE2	2.37	0.55
1:A:133:ASN:ND2	1:A:194:THR:H	1.98	0.55
1:A:118:GLU:HA	1:A:123:LEU:HB3	1.88	0.54
1:A:89:ASN:HB3	4:A:2388:HOH:O	2.08	0.53
1:A:346:GLU:HG2	4:A:2414:HOH:O	2.08	0.53
1:A:230:ARG:HD2	1:A:358:HIS:CE1	2.42	0.53
1:A:170:ASN:ND2	1:A:206:SER:H	2.03	0.53
1:A:335:ILE:O	1:A:339:GLN:HG3	2.08	0.53
1:A:264:LEU:HG	1:A:281:CYS:HB2	1.90	0.52
1:A:115:LYS:O	1:A:119:GLN:HG3	2.10	0.52
1:A:197:SER:O	1:A:202:GLY:HA2	2.10	0.52
1:A:123:LEU:C	1:A:123:LEU:HD23	2.35	0.51
1:A:264:LEU:HD12	1:A:264:LEU:C	2.36	0.51
1:A:171:PHE:N	1:A:209:ASN:HD21	1.99	0.50
1:A:117:ARG:HB3	1:A:123:LEU:HD12	1.94	0.50
1:A:128:MET:HG3	1:A:148:CYS:HA	1.92	0.50
1:A:276:MET:HB3	4:A:2351:HOH:O	2.12	0.50
1:A:385:LEU:HD12	1:A:418:LEU:HD21	1.93	0.49
1:A:327:ASN:HB3	1:A:330:TRP:HB3	1.94	0.49
1:A:115:LYS:HG2	1:A:119:GLN:NE2	2.24	0.49
1:A:143:SER:O	1:A:148:CYS:HB3	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:276:MET:HE2	4:A:2351:HOH:O	2.12	0.49
1:A:136:PHE:CZ	1:A:198:ASN:HB2	2.49	0.48
1:A:100:HIS:C	1:A:102:GLY:N	2.70	0.48
1:A:14:ARG:NE	1:A:14:ARG:HA	2.28	0.48
1:A:211:LYS:HG2	1:A:260:TYR:CZ	2.49	0.47
1:A:102:GLY:C	1:A:104:GLY:N	2.62	0.47
1:A:123:LEU:HD23	1:A:124:ASP:N	2.28	0.47
1:A:280:LEU:HG	1:A:282:MET:HE1	1.97	0.47
1:A:230:ARG:HH22	1:A:270:LYS:NZ	2.12	0.47
1:A:230:ARG:NH2	1:A:270:LYS:NZ	2.62	0.47
1:A:140:GLN:O	1:A:144:GLN:HG3	2.14	0.47
1:A:151:ARG:HD3	4:A:2228:HOH:O	2.15	0.46
1:A:249:THR:OG1	1:A:252:GLN:HG3	2.16	0.46
1:A:128:MET:SD	1:A:148:CYS:HB2	2.56	0.46
1:A:135:PHE:CE2	1:A:150:VAL:HB	2.50	0.46
1:A:110:ILE:O	1:A:114:ILE:HG13	2.16	0.45
1:A:346:GLU:HB2	1:A:352:CME:HZ3	1.97	0.45
1:A:395:GLU:CD	1:A:399:PHE:HB3	2.42	0.45
1:A:348:ILE:HG13	1:A:350:VAL:HG23	1.98	0.45
1:A:228:SER:CB	1:A:258:TYR:OH	2.66	0.44
1:A:103:ARG:HG2	1:A:103:ARG:O	2.18	0.44
1:A:401:LEU:HG	1:A:411:LEU:HB2	1.99	0.44
1:A:335:ILE:HG23	4:A:2404:HOH:O	2.17	0.44
1:A:274:VAL:N	4:A:2349:HOH:O	2.49	0.44
1:A:468:LEU:HD12	1:A:468:LEU:N	2.33	0.43
1:A:381:LEU:HG	1:A:418:LEU:HD22	2.00	0.43
1:A:442:VAL:HG13	1:A:449:ILE:HD11	2.00	0.43
1:A:6:HIS:CE1	1:A:337:GLN:HE21	2.30	0.43
1:A:118:GLU:CA	1:A:123:LEU:HB3	2.49	0.43
1:A:171:PHE:HB2	1:A:209:ASN:HD21	1.84	0.43
1:A:100:HIS:O	1:A:102:GLY:N	2.52	0.43
1:A:129:VAL:HB	1:A:183:VAL:HG11	1.99	0.43
1:A:88:LYS:O	1:A:92:GLY:HA2	2.19	0.43
1:A:104:GLY:HA2	4:A:2179:HOH:O	2.19	0.42
1:A:289:ASP:O	1:A:293:GLU:HG3	2.19	0.42
1:A:407:THR:CG2	1:A:409:LYS:HD3	2.46	0.42
1:A:195:ILE:HA	1:A:196:THR:C	2.43	0.42
1:A:230:ARG:NE	4:A:2102:HOH:O	2.52	0.42
1:A:268:ALA:O	1:A:272:ALA:HB3	2.19	0.42
1:A:63:MET:HE1	1:A:273:MET:HB2	2.02	0.42
1:A:118:GLU:HA	1:A:123:LEU:N	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:276:MET:HG2	1:A:277:GLY:N	2.35	0.41
1:A:106:GLU:HA	1:A:109:TYR:CE2	2.55	0.41
1:A:108:ILE:HG12	4:A:2180:HOH:O	2.20	0.41
1:A:133:ASN:O	1:A:134:TYR:HB2	2.19	0.41
1:A:95:TYR:HB2	1:A:282:MET:HB2	2.03	0.41
1:A:385:LEU:HD11	1:A:439:PHE:CZ	2.56	0.41
1:A:100:HIS:HD2	1:A:309:GLY:HA2	1.85	0.41
1:A:133:ASN:N	1:A:133:ASN:ND2	2.58	0.40
1:A:236:TYR:CD2	1:A:335:ILE:HD12	2.57	0.40
1:A:383:CYS:O	1:A:387:LYS:HG3	2.21	0.40
1:A:109:TYR:HB2	1:A:263:MET:HE1	2.03	0.40
1:A:125:ARG:CB	1:A:128:MET:HE2	2.52	0.40
1:A:230:ARG:NH2	1:A:270:LYS:HZ3	2.17	0.40
1:A:128:MET:HA	1:A:187:ASN:O	2.20	0.40
1:A:371:ILE:HB	1:A:377:PRO:HB3	2.04	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	464/467 (99%)	447 (96%)	15 (3%)	2 (0%)	30	27

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	134	TYR
1	A	101	GLN

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	385/385 (100%)	379 (98%)	6 (2%)	55 62

All (6) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	40	LEU
1	A	133	ASN
1	A	207	LEU
1	A	301	GLN
1	A	358	HIS
1	A	395	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (17) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	6	HIS
1	A	64	GLN
1	A	89	ASN
1	A	100	HIS
1	A	101	GLN
1	A	119	GLN
1	A	133	ASN
1	A	144	GLN
1	A	170	ASN
1	A	198	ASN
1	A	209	ASN
1	A	301	GLN
1	A	327	ASN
1	A	337	GLN
1	A	358	HIS
1	A	429	GLN
1	A	441	HIS

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

1 non-standard protein/DNA/RNA residue is 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	CME	A	352	1	8,9,10	0.43	0	6,9,11	0.46	0

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	CME	A	352	1	-	1/5/8/10	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (1) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	352	CME	CZ-CE-SD-SG

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	A	352	CME	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 2 ligands modelled in this entry, 2 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(Å ²)	Q<0.9
1	A	466/467 (99%)	0.73	64 (13%) 6 6	11, 25, 57, 69	0

All (64) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	303	GLY	6.9
1	A	308	GLY	6.2
1	A	305	PRO	5.6
1	A	145	ILE	5.6
1	A	304	PHE	5.5
1	A	146	ASN	5.4
1	A	100	HIS	5.1
1	A	139	THR	5.1
1	A	138	THR	5.0
1	A	143	SER	5.0
1	A	105	ALA	4.7
1	A	104	GLY	4.7
1	A	136	PHE	4.5
1	A	102	GLY	4.4
1	A	101	GLN	4.3
1	A	123	LEU	4.2
1	A	142	HIS	4.1
1	A	306	THR	4.1
1	A	149	THR	4.0
1	A	301	GLN	3.9
1	A	103	ARG	3.8
1	A	148	CYS	3.7
1	A	307	TYR	3.7
1	A	135	PHE	3.6
1	A	137	ASP	3.5
1	A	150	VAL	3.5
1	A	293	GLU	3.4

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Mol	Chain	Res	Type	RSRZ
1	A	300	VAL	3.4
1	A	302	GLU	3.1
1	A	215	SER	3.1
1	A	185	PRO	3.0
1	A	147	GLY	3.0
1	A	186	ASN	2.9
1	A	156	LYS	2.9
1	A	183	VAL	2.9
1	A	220	TYR	2.9
1	A	164	ARG	2.8
1	A	119	GLN	2.8
1	A	163	VAL	2.8
1	A	407	THR	2.8
1	A	128	MET	2.8
1	A	122	GLY	2.8
1	A	222	ILE	2.8
1	A	151	ARG	2.7
1	A	409	LYS	2.7
1	A	114	ILE	2.7
1	A	276	MET	2.6
1	A	68	MET	2.6
1	A	127	LYS	2.5
1	A	295	ARG	2.5
1	A	141	GLY	2.5
1	A	218	LYS	2.4
1	A	286	SER	2.4
1	A	124	ASP	2.4
1	A	299	VAL	2.4
1	A	444	GLU	2.3
1	A	179	GLY	2.3
1	A	107	GLN	2.3
1	A	140	GLN	2.2
1	A	198	ASN	2.2
1	A	244	GLU	2.1
1	A	309	GLY	2.1
1	A	182	GLU	2.1
1	A	358	HIS	2.1

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($\text{\AA}^2$)	Q<0.9
1	CME	A	352	10/11	0.94	0.09	26,29,36,36	0

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

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($\text{\AA}^2$)	Q<0.9
3	MG	A	1474	1/1	0.97	0.05	29,29,29,29	0
2	CL	A	1472	1/1	0.99	0.04	13,13,13,13	1

6.5 Other polymers [i](#)

There are no such residues in this entry.