



Full wwPDB X-ray Structure Validation Report ⓘ

Jun 27, 2024 – 01:14 PM JST

PDB ID : 8W4G
Title : Crystal structure of EndoSz mutant D234M, from Streptococcus equi subsp. Zooepidemicus Sz105
Authors : Guan, H.H.; Lin, C.C.; Hsieh, Y.C.; Chen, C.J.
Deposited on : 2023-08-24
Resolution : 2.15 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 : 4.02b-467
Xtriage (Phenix) : 1.13
EDS : 2.37.1
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.37.1

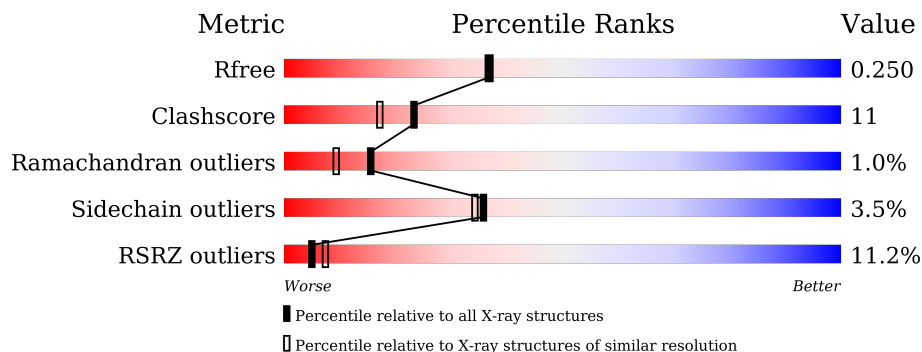
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.15 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}	130704	1479 (2.16-2.16)
Clashscore	141614	1585 (2.16-2.16)
Ramachandran outliers	138981	1560 (2.16-2.16)
Sidechain outliers	138945	1559 (2.16-2.16)
RSRZ outliers	127900	1456 (2.16-2.16)

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	992	

2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 7344 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 glycoside hydrolase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	876	6902	4375	1152	1360	15	0	0	0

- Molecule 2 is CALCIUM ION (three-letter code: CA) (formula: Ca) (labeled as "Ligand of Interest" by depositor).

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

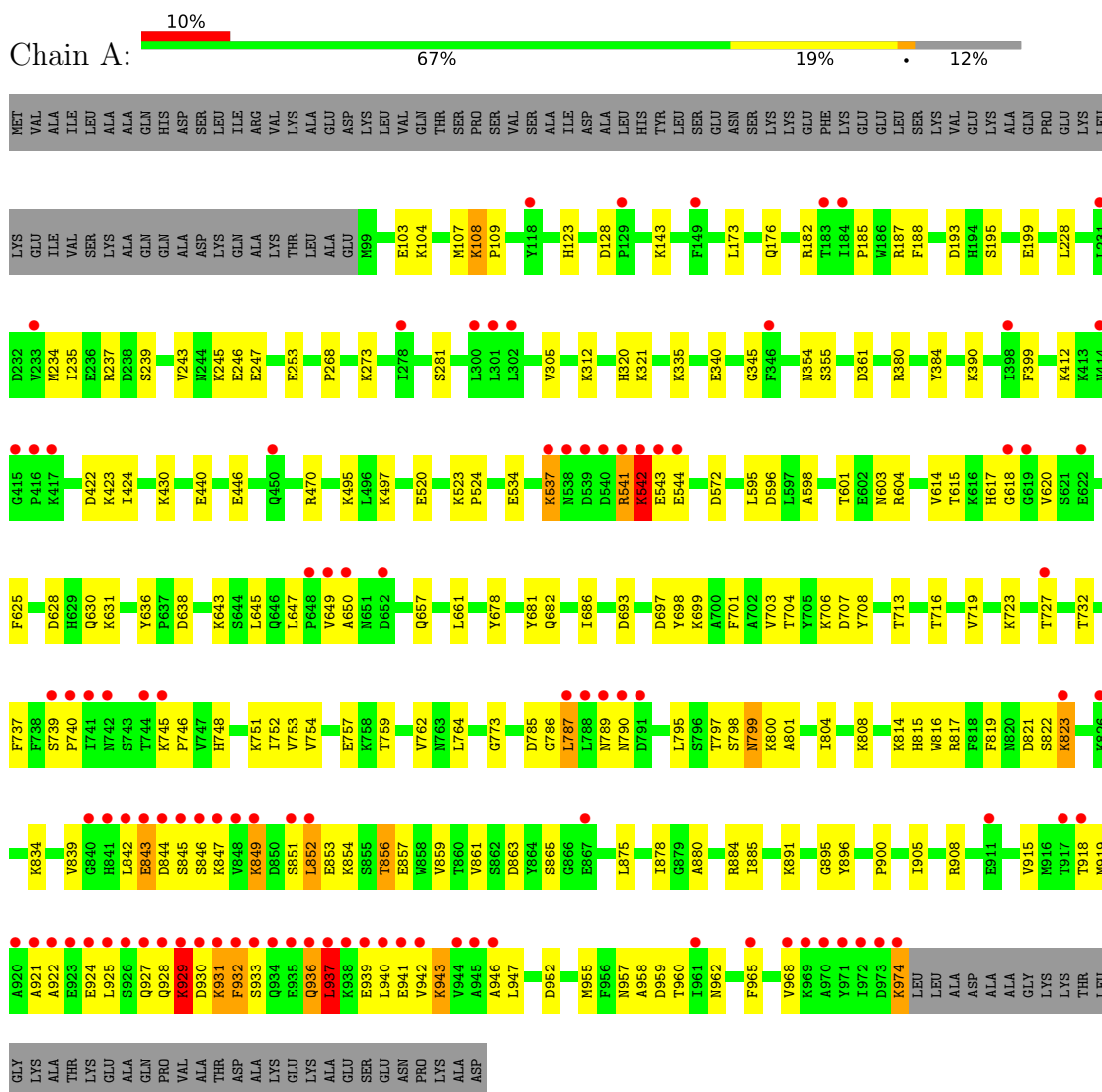
- Molecule 3 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	441	Total	O	0	0
			441	441		

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: glycoside hydrolase



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	50.95Å 101.21Å 234.58Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	42.57 – 2.15 42.57 – 2.15	Depositor EDS
% Data completeness (in resolution range)	99.1 (42.57-2.15) 99.1 (42.57-2.15)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.90 (at 2.16Å)	Xtrriage
Refinement program	PHENIX 1.17.1_3660	Depositor
R, R_{free}	0.215 , 0.250 0.216 , 0.250	Depositor DCC
R_{free} test set	3139 reflections (4.72%)	wwPDB-VP
Wilson B-factor (Å ²)	38.0	Xtrriage
Anisotropy	0.608	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 55.5	EDS
L-test for twinning ²	$\langle L \rangle = 0.44$, $\langle L^2 \rangle = 0.27$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	7344	wwPDB-VP
Average B, all atoms (Å ²)	57.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.32% 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](#)

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

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	0.47	0/7035	0.64	4/9501 (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	799	ASN	N-CA-C	5.42	125.64	111.00
1	A	787	LEU	CA-CB-CG	5.34	127.58	115.30
1	A	937	LEU	N-CA-C	5.32	125.36	111.00
1	A	925	LEU	CA-CB-CG	5.08	126.99	115.30

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	6902	0	6886	156	0
2	A	1	0	0	0	0
3	A	441	0	0	35	2
All	All	7344	0	6886	156	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 11.

All (156) 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:107:MET:SD	3:A:1495:HOH:O	2.21	0.98
1:A:959:ASP:OD1	3:A:1201:HOH:O	1.87	0.92
1:A:245:LYS:O	3:A:1202:HOH:O	1.94	0.86
1:A:354:ASN:OD1	3:A:1204:HOH:O	1.95	0.85
1:A:534:GLU:OE1	3:A:1203:HOH:O	1.94	0.83
1:A:128:ASP:O	3:A:1205:HOH:O	1.97	0.83
1:A:253:GLU:OE2	3:A:1206:HOH:O	2.00	0.79
1:A:937:LEU:HB2	1:A:940:LEU:HB3	1.65	0.78
1:A:108:LYS:HD2	1:A:109:PRO:O	1.84	0.77
1:A:851:SER:C	1:A:853:GLU:H	1.87	0.76
1:A:422:ASP:OD2	3:A:1207:HOH:O	2.04	0.76
1:A:843:GLU:C	1:A:845:SER:H	1.88	0.75
1:A:603:ASN:OD1	3:A:1209:HOH:O	2.06	0.72
1:A:764:LEU:O	3:A:1208:HOH:O	2.06	0.72
1:A:804:ILE:HD13	1:A:884:ARG:HB2	1.71	0.72
1:A:817:ARG:NH1	3:A:1223:HOH:O	2.23	0.72
1:A:921:ALA:HA	1:A:924:GLU:HG2	1.72	0.72
1:A:937:LEU:HD12	1:A:937:LEU:O	1.90	0.71
1:A:615:THR:HG22	1:A:620:VAL:HG21	1.71	0.71
1:A:716:THR:O	1:A:817:ARG:NH2	2.23	0.71
1:A:247:GLU:OE1	3:A:1210:HOH:O	2.07	0.71
1:A:786:GLY:O	1:A:787:LEU:HD22	1.91	0.70
1:A:706:LYS:N	3:A:1229:HOH:O	2.27	0.68
1:A:412:LYS:O	3:A:1211:HOH:O	2.11	0.68
1:A:852:LEU:HB2	1:A:854:LYS:HE3	1.77	0.67
1:A:104:LYS:HD2	3:A:1495:HOH:O	1.95	0.66
1:A:440:GLU:OE2	3:A:1212:HOH:O	2.12	0.66
1:A:839:VAL:O	3:A:1213:HOH:O	2.13	0.66
1:A:851:SER:O	1:A:853:GLU:N	2.23	0.66
1:A:843:GLU:C	1:A:845:SER:N	2.49	0.66
1:A:603:ASN:ND2	3:A:1227:HOH:O	2.26	0.65
1:A:143:LYS:NZ	3:A:1233:HOH:O	2.29	0.65
1:A:798:SER:O	3:A:1214:HOH:O	2.14	0.64
1:A:851:SER:C	1:A:853:GLU:N	2.51	0.63
1:A:924:GLU:HA	1:A:927:GLN:HB2	1.78	0.63
1:A:237:ARG:NH1	3:A:1228:HOH:O	2.26	0.63
1:A:542:LYS:HA	1:A:542:LYS:NZ	2.14	0.62
1:A:928:GLN:HG2	1:A:930:ASP:OD1	1.99	0.62
1:A:931:LYS:O	1:A:931:LYS:NZ	2.22	0.62
1:A:933:SER:HA	1:A:936:GLN:HB2	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:773:GLY:O	3:A:1215:HOH:O	2.16	0.61
1:A:941:GLU:C	1:A:943:LYS:H	2.05	0.60
1:A:797:THR:HG21	1:A:800:LYS:O	2.01	0.60
1:A:918:THR:O	1:A:922:ALA:N	2.35	0.59
1:A:390:LYS:NZ	3:A:1226:HOH:O	2.26	0.59
1:A:822:SER:O	1:A:823:LYS:HB3	2.03	0.59
1:A:957:ASN:ND2	1:A:960:THR:OG1	2.37	0.58
1:A:843:GLU:O	1:A:845:SER:N	2.36	0.58
1:A:195:SER:OG	1:A:199:GLU:HG2	2.04	0.58
1:A:678:TYR:O	1:A:682:GLN:HG3	2.03	0.57
1:A:697:ASP:OD1	1:A:698:TYR:N	2.36	0.57
1:A:320:HIS:O	3:A:1216:HOH:O	2.17	0.57
1:A:759:THR:O	3:A:1217:HOH:O	2.17	0.57
1:A:713:THR:HG23	1:A:719:VAL:HG22	1.87	0.57
1:A:103:GLU:OE2	3:A:1218:HOH:O	2.17	0.57
1:A:123:HIS:HE1	1:A:424:ILE:HD12	1.69	0.57
1:A:819:PHE:O	1:A:900:PRO:HD2	2.05	0.56
1:A:861:VAL:HG12	1:A:875:LEU:HD22	1.88	0.55
1:A:799:ASN:ND2	3:A:1243:HOH:O	2.35	0.55
1:A:520:GLU:OE1	3:A:1219:HOH:O	2.18	0.55
1:A:762:VAL:HG21	1:A:908:ARG:HE	1.71	0.55
1:A:804:ILE:HD11	1:A:884:ARG:HD3	1.90	0.54
1:A:614:VAL:HG21	1:A:625:PHE:CD2	2.43	0.53
1:A:354:ASN:ND2	1:A:355:SER:O	2.41	0.53
1:A:650:ALA:O	1:A:727:THR:OG1	2.18	0.53
1:A:878:ILE:HG22	1:A:880:ALA:H	1.74	0.53
1:A:643:LYS:HG3	1:A:748:HIS:HE1	1.74	0.53
1:A:797:THR:OG1	1:A:798:SER:N	2.40	0.52
1:A:846:SER:HB3	1:A:849:LYS:HB3	1.90	0.52
1:A:707:ASP:HB2	1:A:740:PRO:HG3	1.92	0.52
1:A:596:ASP:OD1	1:A:601:THR:HG21	2.10	0.52
1:A:933:SER:CA	1:A:936:GLN:HB2	2.40	0.52
1:A:645:LEU:HB2	1:A:752:ILE:HD12	1.93	0.51
1:A:598:ALA:HB2	1:A:681:TYR:HE1	1.76	0.51
1:A:103:GLU:CD	1:A:104:LYS:H	2.15	0.51
1:A:928:GLN:HG2	1:A:930:ASP:CG	2.32	0.50
1:A:345:GLY:HA3	1:A:399:PHE:CZ	2.47	0.50
1:A:708:TYR:CZ	1:A:739:SER:HB2	2.46	0.50
1:A:856:THR:OG1	1:A:857:GLU:N	2.45	0.50
1:A:361:ASP:OD1	1:A:380:ARG:HD2	2.12	0.49
1:A:943:LYS:HG3	1:A:968:VAL:CG2	2.42	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:657:GLN:CB	1:A:723:LYS:HD3	2.42	0.49
1:A:108:LYS:HE2	3:A:1582:HOH:O	2.13	0.48
1:A:928:GLN:CG	1:A:930:ASP:OD1	2.62	0.48
1:A:815:HIS:HB3	1:A:905:ILE:HB	1.96	0.48
1:A:974:LYS:N	1:A:974:LYS:HD2	2.29	0.48
1:A:799:ASN:HB2	1:A:895:GLY:HA3	1.96	0.47
1:A:941:GLU:O	1:A:943:LYS:N	2.46	0.47
1:A:958:ALA:O	1:A:962:ASN:ND2	2.47	0.47
1:A:697:ASP:OD1	1:A:699:LYS:N	2.48	0.47
1:A:797:THR:O	1:A:896:TYR:HA	2.14	0.47
1:A:617:HIS:CG	1:A:618:GLY:H	2.33	0.47
1:A:657:GLN:HB3	1:A:723:LYS:HD3	1.96	0.47
1:A:941:GLU:C	1:A:943:LYS:N	2.68	0.47
1:A:929:LYS:HB3	1:A:929:LYS:HE2	1.41	0.46
1:A:235:ILE:O	1:A:281:SER:HA	2.16	0.46
1:A:620:VAL:N	3:A:1265:HOH:O	2.48	0.46
1:A:732:THR:HG23	1:A:753:VAL:HG22	1.96	0.46
1:A:919:MET:HG3	1:A:947:LEU:HD22	1.97	0.46
1:A:628:ASP:OD1	1:A:628:ASP:N	2.49	0.46
1:A:891:LYS:O	3:A:1220:HOH:O	2.21	0.46
1:A:595:LEU:HD12	1:A:630:GLN:NE2	2.31	0.45
1:A:842:LEU:HD23	1:A:842:LEU:HA	1.62	0.45
1:A:430:LYS:HA	1:A:430:LYS:HD2	1.57	0.45
1:A:495:LYS:HE2	1:A:495:LYS:HB3	1.73	0.45
1:A:523:LYS:HB2	1:A:524:PRO:HD2	1.99	0.45
1:A:816:TRP:CD1	1:A:875:LEU:HD11	2.52	0.45
1:A:929:LYS:C	1:A:931:LYS:H	2.19	0.45
1:A:943:LYS:HZ3	1:A:946:ALA:HB3	1.82	0.45
1:A:636:TYR:CZ	1:A:703:VAL:HG13	2.52	0.45
1:A:795:LEU:HD21	1:A:896:TYR:C	2.37	0.44
1:A:595:LEU:HD12	1:A:630:GLN:HE22	1.81	0.44
1:A:834:LYS:O	1:A:885:ILE:HD12	2.18	0.44
1:A:185:PRO:HG2	1:A:188:PHE:CD1	2.53	0.44
1:A:234:MET:HE3	1:A:234:MET:HB2	1.96	0.44
1:A:446:GLU:OE2	1:A:470:ARG:NH1	2.51	0.44
1:A:661:LEU:HD22	1:A:737:PHE:CG	2.53	0.43
1:A:789:ASN:ND2	1:A:821:ASP:OD1	2.52	0.43
1:A:924:GLU:HA	1:A:927:GLN:CB	2.44	0.43
1:A:173:LEU:O	1:A:176:GLN:HG2	2.18	0.43
1:A:795:LEU:HD21	1:A:896:TYR:CA	2.48	0.43
1:A:745:LYS:HA	1:A:746:PRO:HD3	1.90	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:542:LYS:HB3	1:A:543:GLU:H	1.67	0.43
1:A:182:ARG:HB2	1:A:228:LEU:HD12	1.99	0.43
1:A:497:LYS:HE3	3:A:1219:HOH:O	2.17	0.43
1:A:804:ILE:CD1	1:A:884:ARG:HD3	2.48	0.42
1:A:798:SER:O	1:A:799:ASN:HB3	2.19	0.42
1:A:940:LEU:HD12	1:A:940:LEU:O	2.20	0.42
1:A:340:GLU:OE1	3:A:1221:HOH:O	2.22	0.42
1:A:604:ARG:CZ	1:A:686:ILE:HG12	2.49	0.42
1:A:915:VAL:HG22	1:A:965:PHE:CD2	2.55	0.42
1:A:104:LYS:HA	1:A:104:LYS:HD3	1.81	0.42
1:A:541:ARG:HD3	1:A:542:LYS:HD2	2.01	0.42
1:A:932:PHE:HB3	1:A:933:SER:H	1.56	0.42
1:A:335:LYS:NZ	3:A:1276:HOH:O	2.53	0.42
1:A:187:ARG:HG3	1:A:239:SER:O	2.20	0.41
1:A:537:LYS:NZ	1:A:537:LYS:HB2	2.36	0.41
1:A:852:LEU:CB	1:A:854:LYS:HE3	2.47	0.41
1:A:243:VAL:O	1:A:246:GLU:HG2	2.21	0.41
1:A:305:VAL:HG23	1:A:384:TYR:CE2	2.56	0.41
1:A:423:LYS:HA	1:A:423:LYS:HD2	1.89	0.41
1:A:542:LYS:HA	1:A:542:LYS:HZ1	1.83	0.41
1:A:631:LYS:HE2	1:A:693:ASP:CG	2.41	0.41
1:A:797:THR:HG22	1:A:801:ALA:HB2	2.02	0.41
1:A:704:THR:OG1	1:A:706:LYS:HG3	2.21	0.41
1:A:187:ARG:HD2	1:A:193:ASP:O	2.21	0.40
1:A:649:VAL:HG22	1:A:754:VAL:HG12	2.01	0.40
1:A:751:LYS:HE2	1:A:751:LYS:HB3	1.74	0.40
1:A:312:LYS:NZ	3:A:1272:HOH:O	2.51	0.40
1:A:541:ARG:HB3	1:A:542:LYS:H	1.61	0.40
1:A:785:ASP:OD1	1:A:786:GLY:N	2.54	0.40
1:A:797:THR:CG2	1:A:801:ALA:HB2	2.51	0.40
1:A:843:GLU:OE2	1:A:856:THR:HA	2.22	0.40
1:A:757:GLU:HG2	1:A:955:MET:SD	2.61	0.40
1:A:268:PRO:O	1:A:273:LYS:HE3	2.22	0.40
1:A:321:LYS:HE2	1:A:321:LYS:HB3	1.91	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)
3:A:1584:HOH:O	3:A:1599:HOH:O[1_655]	1.87	0.33
3:A:1607:HOH:O	3:A:1626:HOH:O[1_455]	2.02	0.18

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	874/992 (88%)	810 (93%)	55 (6%)	9 (1%)	15 9

All (9) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	844	ASP
1	A	852	LEU
1	A	937	LEU
1	A	942	VAL
1	A	929	LYS
1	A	932	PHE
1	A	936	GLN
1	A	542	LYS
1	A	847	LYS

5.3.2 Protein sidechains [i](#)

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	753/847 (89%)	727 (96%)	26 (4%)	36 34

All (26) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	108	LYS
1	A	537	LYS

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Mol	Chain	Res	Type
1	A	541	ARG
1	A	542	LYS
1	A	544	GLU
1	A	572	ASP
1	A	638	ASP
1	A	647	LEU
1	A	701	PHE
1	A	790	ASN
1	A	808	LYS
1	A	814	LYS
1	A	823	LYS
1	A	843	GLU
1	A	849	LYS
1	A	856	THR
1	A	859	VAL
1	A	863	ASP
1	A	865	SER
1	A	929	LYS
1	A	931	LYS
1	A	937	LEU
1	A	939	GLU
1	A	943	LYS
1	A	952	ASP
1	A	974	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	550	GLN
1	A	742	ASN

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 monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 1 ligands modelled in this entry, 1 is 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	876/992 (88%)	0.85	98 (11%) 5 7	24, 54, 110, 202	0

All (98) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	925	LEU	13.8
1	A	927	GLN	11.1
1	A	972	ILE	10.8
1	A	932	PHE	9.1
1	A	930	ASP	8.4
1	A	936	GLN	8.2
1	A	938	LYS	7.9
1	A	935	GLU	7.8
1	A	926	SER	7.8
1	A	933	SER	7.7
1	A	844	ASP	7.6
1	A	942	VAL	7.5
1	A	921	ALA	7.2
1	A	944	VAL	7.0
1	A	843	GLU	7.0
1	A	788	LEU	7.0
1	A	845	SER	6.9
1	A	940	LEU	6.8
1	A	934	GLN	6.8
1	A	928	GLN	6.7
1	A	939	GLU	6.6
1	A	842	LEU	6.5
1	A	924	GLU	6.1
1	A	848	VAL	6.0
1	A	929	LYS	5.9
1	A	920	ALA	5.8
1	A	937	LEU	5.6

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Mol	Chain	Res	Type	RSRZ
1	A	841	HIS	5.4
1	A	973	ASP	5.4
1	A	542	LYS	5.2
1	A	543	GLU	5.1
1	A	849	LYS	5.1
1	A	539	ASP	5.0
1	A	540	ASP	5.0
1	A	970	ALA	5.0
1	A	971	TYR	4.9
1	A	787	LEU	4.9
1	A	846	SER	4.9
1	A	840	GLY	4.7
1	A	541	ARG	4.7
1	A	537	LYS	4.7
1	A	922	ALA	4.6
1	A	969	LYS	4.3
1	A	965	PHE	3.9
1	A	931	LYS	3.8
1	A	745	LYS	3.7
1	A	852	LEU	3.6
1	A	847	LYS	3.6
1	A	911	GLU	3.5
1	A	961	ILE	3.5
1	A	968	VAL	3.5
1	A	744	THR	3.3
1	A	538	ASN	3.3
1	A	740	PRO	3.2
1	A	302	LEU	3.2
1	A	184	ILE	3.2
1	A	278	ILE	3.1
1	A	414	ASN	3.1
1	A	544	GLU	3.1
1	A	739	SER	3.1
1	A	417	LYS	3.0
1	A	823	LYS	3.0
1	A	923	GLU	2.9
1	A	415	GLY	2.9
1	A	790	ASN	2.9
1	A	917	THR	2.9
1	A	945	ALA	2.9
1	A	742	ASN	2.8
1	A	789	ASN	2.8

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Mol	Chain	Res	Type	RSRZ
1	A	618	GLY	2.7
1	A	851	SER	2.7
1	A	791	ASP	2.7
1	A	650	ALA	2.7
1	A	741	ILE	2.7
1	A	301	LEU	2.6
1	A	727	THR	2.6
1	A	233	VAL	2.6
1	A	974	LYS	2.5
1	A	346	PHE	2.4
1	A	941	GLU	2.4
1	A	416	PRO	2.4
1	A	183	THR	2.4
1	A	619	GLY	2.4
1	A	398	ILE	2.3
1	A	118	TYR	2.3
1	A	826	LYS	2.3
1	A	918	THR	2.2
1	A	649	VAL	2.2
1	A	652	ASP	2.2
1	A	300	LEU	2.1
1	A	946	ALA	2.1
1	A	648	PRO	2.1
1	A	231	LEU	2.1
1	A	149	PHE	2.1
1	A	129	PRO	2.1
1	A	450	GLN	2.1
1	A	622	GLU	2.0
1	A	867	GLU	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](#)

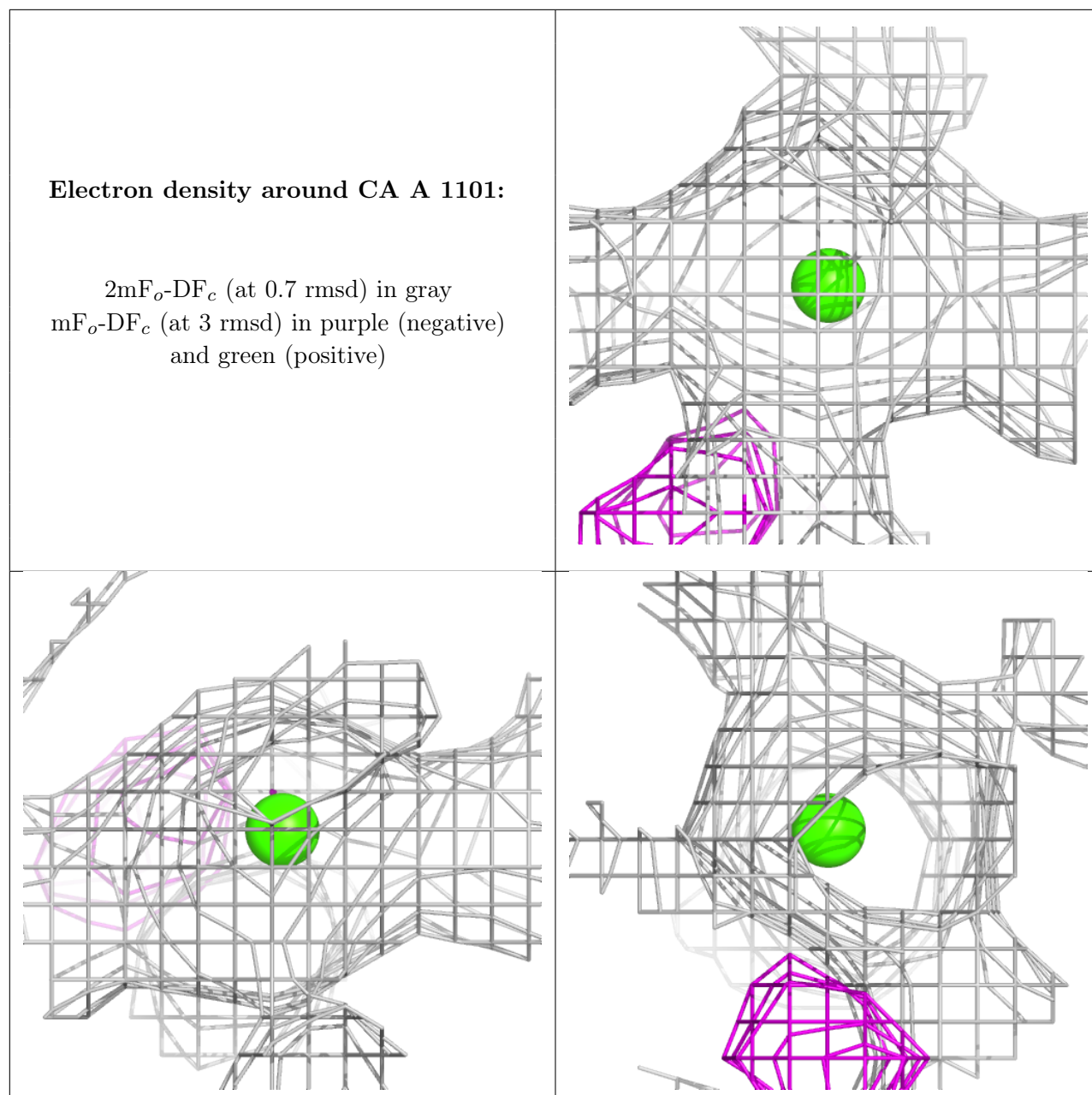
There are no monosaccharides in this entry.

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(\AA^2)	Q<0.9
2	CA	A	1101	1/1	0.79	0.16	83,83,83,83	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.



6.5 Other polymers ⓘ

There are no such residues in this entry.