Full wwPDB X-ray Structure Validation Report (i)

Aug 28, 2024 – 07:50 pm BST

PDB ID	:	8S3C
Title	:	Crystal structure of Medicago truncatula glutamate dehydrogenase 2 (unliganded)
Authors	:	Grzechowiak, M.; Ruszkowski, M.
Deposited on	:	2024-02-19
Resolution	:	2.20 Å(reported)

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

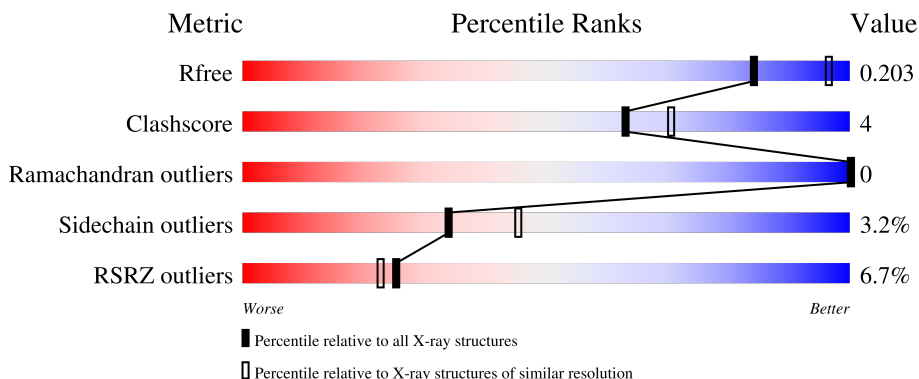|		
MolProbity	:	4.02b-467
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	3.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.002 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.38.2

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 2.20 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		0.203
Clashscore		4
Ramachandran outliers		0
Sidechain outliers		3.2%
RSRZ outliers		6.7%

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	5791 (2.20-2.20)
Clashscore	180529	6634 (2.20-2.20)
Ramachandran outliers	177936	6560 (2.20-2.20)
Sidechain outliers	177891	6561 (2.20-2.20)
RSRZ outliers	164620	5791 (2.20-2.20)

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	414	3% 88% 11% •
1	B	414	6% 90% 8% ••
1	C	414	11% 88% 11% •

WORLDWIDE

wwPDB

PROTEIN DATA BANK

2 Entry composition ⓘ

There are 6 unique types of molecules in this entry. The entry contains 9750 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 Glutamate dehydrogenase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	410	Total	C	N	O	S	0	0	0
			3126	1973	548	590	15			
1	B	411	Total	C	N	O	S	0	0	0
			3134	1978	549	591	16			
1	C	410	Total	C	N	O	S	0	0	0
			3126	1973	548	590	15			

There are 9 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-2	SER	-	expression tag	UNP G7JYL4
A	-1	ASN	-	expression tag	UNP G7JYL4
A	0	ALA	-	expression tag	UNP G7JYL4
B	-2	SER	-	expression tag	UNP G7JYL4
B	-1	ASN	-	expression tag	UNP G7JYL4
B	0	ALA	-	expression tag	UNP G7JYL4
C	-2	SER	-	expression tag	UNP G7JYL4
C	-1	ASN	-	expression tag	UNP G7JYL4
C	0	ALA	-	expression tag	UNP G7JYL4

- Molecule 2 is DI(HYDROXYETHYL)ETHER (three-letter code: PEG) (formula: $C_4H_{10}O_3$).

PEG

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total 7	C 4	O 3	0	0
2	A	1	Total 7	C 4	O 3	0	0
2	B	1	Total 7	C 4	O 3	0	0
2	B	1	Total 7	C 4	O 3	0	0
2	C	1	Total 7	C 4	O 3	0	0

- Molecule 3 is 1,2-ETHANEDIOL (three-letter code: EDO) (formula: $C_2H_6O_2$).

EDO

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total 4	C 2	O 2	0	0
3	B	1	Total 4	C 2	O 2	0	0
3	C	1	Total 4	C 2	O 2	0	0

- Molecule 4 is CALCIUM ION (three-letter code: CA) (formula: Ca) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	B	2	Total 2	Ca 2	0	0
4	C	1	Total 1	Ca 1	0	0

- Molecule 5 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	B	1	Total 1	Na 1	0	0
5	C	1	Total 1	Na 1	0	0

- Molecule 6 is water.

| Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	103	Total 103	O 103	0	0
6	B	110	Total 110	O 110	0	0
6	C	99	Total 99	O 99	0	0

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.
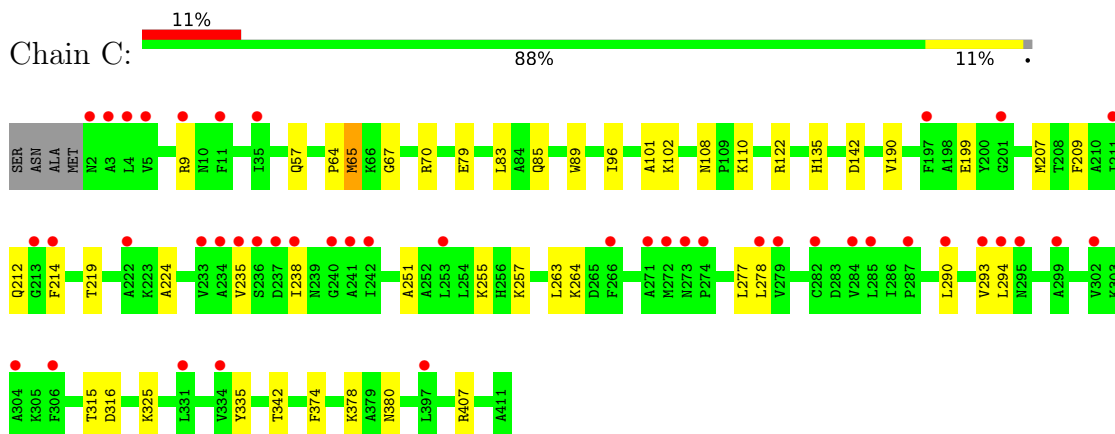
- Molecule 1: Glutamate dehydrogenase
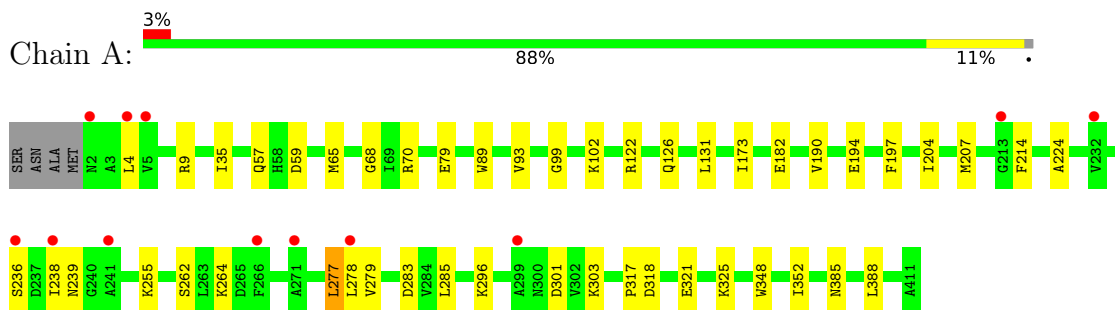
- Molecule 1: Glutamate dehydrogenase
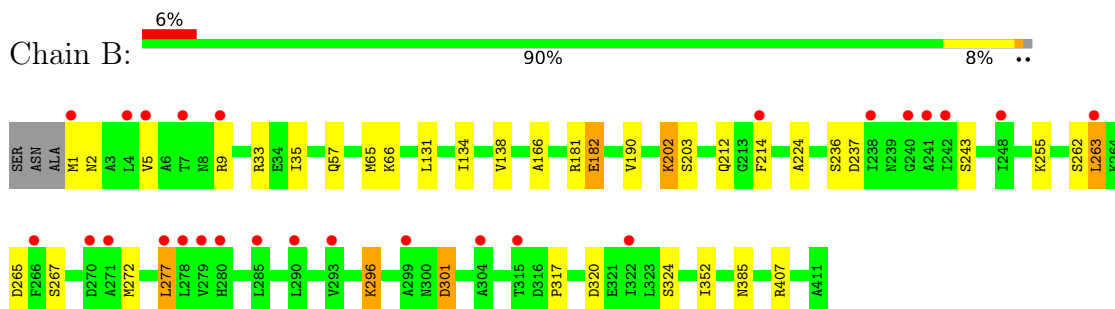
- Molecule 1: Glutamate dehydrogenase

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, α, β, γ	95.65Å 164.55Å 195.41Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	47.83 – 2.20 47.83 – 2.20	Depositor EDS
% Data completeness (in resolution range)	99.8 (47.83-2.20) 99.8 (47.83-2.20)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.49 (at 2.20Å)	Xtriage
Refinement program	PHENIX 1.20.1_4487	Depositor
R, R_{free}	0.174 , 0.204 0.172 , 0.203	Depositor DCC
R_{free} test set	1118 reflections (1.28%)	wwPDB-VP
Wilson B-factor (Å^2)	51.4	Xtriage
Anisotropy	0.222	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 47.3	EDS
L-test for twinning[2]	$< |L| > = 0.50, < L^2 > = 0.33$	Xtriage
Estimated twinning fraction	0.000 for 1/2*h-1/2*k,-3/2*h-1/2*k,-l 0.014 for 1/2*h+1/2*k,3/2*h-1/2*k,-l	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	9750	wwPDB-VP
Average B, all atoms (Å^2)	68.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.48% of the height of the origin peak. No significant pseudotranslation is detected.*

---

[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: EDO, CA, NA, PEG

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	0.40	0/3188	0.57	0/4316
1	B	0.42	0/3196	0.57	0/4326
1	C	0.42	0/3188	0.57	0/4316
All	All	0.41	0/9572	0.57	0/12958

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

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	3126	0	3110	24	0
1	B	3134	0	3122	25	0
1	C	3126	0	3110	26	0
2	A	14	0	20	1	0
2	B	14	0	20	1	0
2	C	7	0	10	0	0
3	A	4	0	6	0	0
3	B	4	0	6	0	0
3	C	4	0	6	1	0
4	B	2	0	0	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	C	1	0	0	0	0
5	B	1	0	0	0	0
5	C	1	0	0	0	0
6	A	103	0	0	0	0
6	B	110	0	0	3	0
6	C	99	0	0	3	0
All	All	9750	0	9410	73	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 4.

All (73) 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:296:LYS:HB3	1:A:318:ASP:HB3	1.63	0.80
1:A:35:ILE:HD13	1:A:131:LEU:HD13	1.71	0.71
1:B:190:VAL:HG21	1:B:224:ALA:HB3	1.76	0.67
1:B:236:SER:HB2	1:B:277:LEU:HD13	1.75	0.67
1:A:190:VAL:HG21	1:A:224:ALA:HB3	1.80	0.64
1:B:5:VAL:O	1:B:9:ARG:HG3	1.98	0.63
1:C:190:VAL:HG21	1:C:224:ALA:HB3	1.81	0.62
1:A:182:GLU:H	1:A:182:GLU:CD	2.03	0.62
1:B:57:GLN:HB3	1:B:65:MET:SD	2.39	0.62
1:A:57:GLN:HB3	1:A:65:MET:SD	2.42	0.60
1:B:202:LYS:NZ	2:B:503:PEG:O1	2.34	0.59
1:B:182:GLU:H	1:B:182:GLU:CD	2.04	0.59
1:B:134:ILE:HD12	1:B:166:ALA:HB3	1.86	0.57
1:C:102:LYS:NZ	6:C:602:HOH:O	2.41	0.53
1:C:235:VAL:HG12	1:C:263:LEU:HD21	1.92	0.52
1:C:293:VAL:HG23	1:C:294:LEU:HD13	1.90	0.52
1:C:251:ALA:O	1:C:255:LYS:HG2	2.09	0.52
1:C:57:GLN:HB3	1:C:65:MET:SD	2.50	0.52
1:B:35:ILE:HG13	1:B:131:LEU:HD13	1.92	0.52
1:A:236:SER:CB	1:A:277:LEU:HD13	2.41	0.51
1:C:212:GLN:HB2	1:C:277:LEU:HD12	1.92	0.51
1:B:134:ILE:HG12	6:B:636:HOH:O	2.10	0.51
1:C:135:HIS:HD2	6:C:688:HOH:O	1.94	0.50
1:B:262:SER:HB2	1:B:265:ASP:OD1	2.12	0.50
1:A:278:LEU:HD22	1:A:285:LEU:HD21	1.93	0.49
1:C:278:LEU:H	1:C:278:LEU:HD22	1.78	0.49
1:B:243:SER:HB2	1:B:272:MET:CE	2.43	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:96:ILE:HD11	1:C:342:THR:HA	1.95	0.49
1:B:134:ILE:CG2	1:B:352:ILE:HD11	2.43	0.48
1:B:237:ASP:HB2	1:B:263:LEU:HG	1.95	0.48
1:A:9:ARG:CZ	1:A:317:PRO:HG3	2.42	0.48
1:C:64:PRO:HA	3:C:501:EDO:H21	1.95	0.48
1:A:262:SER:OG	1:A:264:LYS:HG2	2.14	0.47
1:B:212:GLN:HA	1:B:236:SER:HB3	1.97	0.47
1:B:301:ASP:N	1:B:301:ASP:OD1	2.48	0.47
1:A:348:TRP:O	1:A:352:ILE:HG12	2.15	0.47
1:C:212:GLN:HE22	1:C:278:LEU:HD21	1.79	0.46
1:C:212:GLN:NE2	1:C:278:LEU:HD21	2.30	0.46
1:A:89:TRP:O	1:A:93:VAL:HG23	2.15	0.46
1:B:134:ILE:HG21	1:B:352:ILE:HD11	1.98	0.46
1:A:122:ARG:NH2	1:C:407:ARG:O	2.50	0.45
1:B:33:ARG:NH1	6:B:601:HOH:O	2.23	0.45
1:C:219:THR:HG21	1:C:257:LYS:HE2	1.98	0.45
1:A:68:GLY:H	1:A:102:LYS:NZ	2.15	0.45
1:B:9:ARG:NH2	1:B:317:PRO:HG3	2.32	0.45
1:C:85:GLN:HG2	1:C:89:TRP:NE1	2.32	0.45
1:C:290:LEU:HD13	1:C:290:LEU:HA	1.77	0.44
1:A:207:MET:HE3	1:A:283:ASP:HB3	1.98	0.44
1:B:243:SER:HB2	1:B:272:MET:HE2	1.99	0.44
1:B:182:GLU:CD	1:B:182:GLU:N	2.71	0.44
1:A:236:SER:HB2	1:A:277:LEU:HD13	2.00	0.44
1:C:67:GLY:HA3	1:C:101:ALA:O	2.18	0.44
1:B:255:LYS:HA	1:B:255:LYS:HD3	1.59	0.43
1:B:66:LYS:HD2	1:B:138:VAL:HB	2.00	0.43
1:A:321:GLU:OE1	1:A:325:LYS:HE3	2.18	0.43
1:C:79:GLU:O	1:C:83:LEU:HG	2.19	0.43
1:A:388:LEU:HG	2:A:703:PEG:H42	2.00	0.43
1:A:238:ILE:HG23	1:A:239:ASN:OD1	2.18	0.43
1:A:59:ASP:O	1:A:99:GLY:HA3	2.18	0.42
1:A:197:PHE:CE2	1:A:207:MET:HG3	2.54	0.42
1:C:207:MET:HB2	1:C:209:PHE:CE1	2.55	0.42
1:B:181:ARG:NH1	6:B:602:HOH:O	2.29	0.42
1:C:70:ARG:HG2	1:C:142:ASP:CG	2.40	0.42
1:A:194:GLU:HG3	1:A:204:ILE:HD12	2.02	0.42
1:C:199:GLU:HG3	1:C:374:PHE:HE2	1.84	0.42
1:B:407:ARG:O	1:C:122:ARG:NH2	2.53	0.41
1:C:135:HIS:HE1	6:C:687:HOH:O	2.03	0.41
1:A:122:ARG:O	1:A:126:GLN:HG3	2.19	0.41

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:279:VAL:O	1:A:303:LYS:HD2	2.21	0.41
1:C:108:ASN:HD21	1:C:110:LYS:HE3	1.86	0.41
1:A:173:ILE:HD13	1:A:173:ILE:HA	1.86	0.41
1:C:335:TYR:OH	1:C:374:PHE:HB2	2.22	0.40
1:B:296:LYS:HB3	1:B:296:LYS:HE2	1.85	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	408/414 (99%)	396 (97%)	12 (3%)	0	100	100
1	B	409/414 (99%)	399 (98%)	10 (2%)	0	100	100
1	C	408/414 (99%)	399 (98%)	9 (2%)	0	100	100
All	All	1225/1242 (99%)	1194 (98%)	31 (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	329/332 (99%)	321 (98%)	8 (2%)	44	57
1	B	330/332 (99%)	316 (96%)	14 (4%)	25	33

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	C	329/332 (99%)	319 (97%)	10 (3%)	36	48
All	All	988/996 (99%)	956 (97%)	32 (3%)	34	45

All (32) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	4	LEU
1	A	70	ARG
1	A	79	GLU
1	A	214	PHE
1	A	255	LYS
1	A	277	LEU
1	A	301	ASP
1	A	385	ASN
1	B	1	MET
1	B	2	ASN
1	B	182	GLU
1	B	202	LYS
1	B	203	SER
1	B	214	PHE
1	B	263	LEU
1	B	267	SER
1	B	277	LEU
1	B	296	LYS
1	B	301	ASP
1	B	320	ASP
1	B	324	SER
1	B	385	ASN
1	C	9	ARG
1	C	65	MET
1	C	214	PHE
1	C	238	ILE
1	C	264	LYS
1	C	315	THR
1	C	316	ASP
1	C	325	LYS
1	C	378	LYS
1	C	380	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 13 ligands modelled in this entry, 5 are monoatomic - leaving 8 for Mogul analysis.

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	$\#|Z| > 2$
2	PEG	B	501	-	6,6,6	0.20	0	5,5,5	0.11	0
3	EDO	B	502	-	3,3,3	0.65	0	2,2,2	0.07	0
3	EDO	C	501	-	3,3,3	0.45	0	2,2,2	0.60	0
2	PEG	A	703	-	6,6,6	0.24	0	5,5,5	0.14	0
2	PEG	A	701	-	6,6,6	0.19	0	5,5,5	0.06	0
3	EDO	A	702	-	3,3,3	0.51	0	2,2,2	0.29	0
2	PEG	C	502	-	6,6,6	0.22	0	5,5,5	0.12	0
2	PEG	B	503	-	6,6,6	0.23	0	5,5,5	0.10	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
2	PEG	B	501	-	-	1/4/4/4	-
3	EDO	B	502	-	-	1/1/1/1	-

Continued on next page...

Full wwPDB X-ray Structure Validation Report

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	EDO	C	501	-	-	0/1/1/1	-
2	PEG	A	703	-	-	2/4/4/4	-
2	PEG	A	701	-	-	0/4/4/4	-
3	EDO	A	702	-	-	0/1/1/1	-
2	PEG	C	502	-	-	2/4/4/4	-
2	PEG	B	503	-	-	0/4/4/4	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (6) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	703	PEG	O2-C3-C4-O4
2	B	501	PEG	O1-C1-C2-O2
2	C	502	PEG	O1-C1-C2-O2
2	C	502	PEG	C1-C2-O2-C3
2	A	703	PEG	C1-C2-O2-C3
3	B	502	EDO	O1-C1-C2-O2

There are no ring outliers.

3 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	C	501	EDO	1	0
2	A	703	PEG	1	0
2	B	503	PEG	1	0

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 (i)

6.1 Protein, DNA and RNA chains (i)

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	410/414 (99%)	0.30	12 (2%)	54	51	40, 64, 104, 132	0
1	B	411/414 (99%)	0.43	26 (6%)	27	24	39, 60, 112, 127	0
1	C	410/414 (99%)	0.71	45 (10%)	12	10	41, 67, 117, 139	0
All	All	1231/1242 (99%)	0.48	83 (6%)	25	23	39, 63, 112, 139	0

All (83) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	238	ILE	5.3
1	C	2	ASN	3.9
1	C	302	VAL	3.7
1	A	2	ASN	3.6
1	B	240	GLY	3.6
1	B	290	LEU	3.6
1	C	271	ALA	3.5
1	C	278	LEU	3.4
1	C	238	ILE	3.4
1	C	294	LEU	3.4
1	C	293	VAL	3.3
1	B	1	MET	3.3
1	B	214	PHE	3.2
1	B	270	ASP	2.9
1	C	279	VAL	2.9
1	C	290	LEU	2.9
1	C	241	ALA	2.9
1	B	9	ARG	2.9
1	B	248	ILE	2.8
1	C	235	VAL	2.8
1	B	299	ALA	2.8
1	B	278	LEU	2.8
1	A	236	SER	2.7

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	B	280	HIS	2.7
1	B	4	LEU	2.7
1	B	279	VAL	2.7
1	C	233	VAL	2.7
1	C	274	PRO	2.7
1	C	304	ALA	2.7
1	C	285	LEU	2.6
1	B	5	VAL	2.6
1	B	271	ALA	2.6
1	C	242	ILE	2.6
1	B	241	ALA	2.6
1	B	263	LEU	2.6
1	C	214	PHE	2.5
1	C	211	ILE	2.5
1	C	236	SER	2.5
1	A	241	ALA	2.5
1	C	331	LEU	2.5
1	C	272	MET	2.4
1	C	234	ALA	2.4
1	A	5	VAL	2.4
1	C	237	ASP	2.4
1	C	222	ALA	2.4
1	B	266	PHE	2.4
1	B	242	ILE	2.4
1	A	213	GLY	2.4
1	C	240	GLY	2.4
1	C	3	ALA	2.3
1	A	266	PHE	2.3
1	C	197	PHE	2.3
1	C	213	GLY	2.3
1	B	277	LEU	2.3
1	C	397	LEU	2.3
1	B	304	ALA	2.3
1	B	315	THR	2.3
1	C	11	PHE	2.3
1	A	278	LEU	2.2
1	C	4	LEU	2.2
1	C	299	ALA	2.2
1	C	5	VAL	2.2
1	C	284	VAL	2.2
1	B	322	ILE	2.2
1	C	266	PHE	2.2

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	A	299	ALA	2.2
1	A	238	ILE	2.2
1	A	4	LEU	2.2
1	C	35	ILE	2.1
1	C	201	GLY	2.1
1	A	271	ALA	2.1
1	C	306	PHE	2.1
1	C	282	CYS	2.1
1	C	287	PRO	2.1
1	A	232	VAL	2.1
1	C	334	VAL	2.1
1	B	7	THR	2.1
1	B	293	VAL	2.1
1	C	9	ARG	2.1
1	C	273	ASN	2.1
1	B	285	LEU	2.0
1	C	253	LEU	2.0
1	C	295	ASN	2.0

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

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

6.3 Carbohydrates ⓘ

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($Å^2$)	Q<0.9
3	EDO	B	502	4/4	0.76	0.17	67,70,70,79	0
2	PEG	B	503	7/7	0.78	0.15	86,88,92,95	0
5	NA	C	504	1/1	0.79	0.12	83,83,83,83	0
2	PEG	A	703	7/7	0.81	0.18	85,86,90,91	0
2	PEG	C	502	7/7	0.84	0.15	86,88,90,93	0

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	PEG	A	701	7/7	0.85	0.14	83,83,86,87	0
2	PEG	B	501	7/7	0.86	0.14	70,73,74,76	0
3	EDO	A	702	4/4	0.86	0.12	71,73,74,76	0
5	NA	B	506	1/1	0.93	0.14	70,70,70,70	1
3	EDO	C	501	4/4	0.94	0.20	49,51,53,55	0
4	CA	B	504	1/1	0.98	0.03	47,47,47,47	0
4	CA	B	505	1/1	0.99	0.04	47,47,47,47	0
4	CA	C	503	1/1	0.99	0.03	50,50,50,50	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.
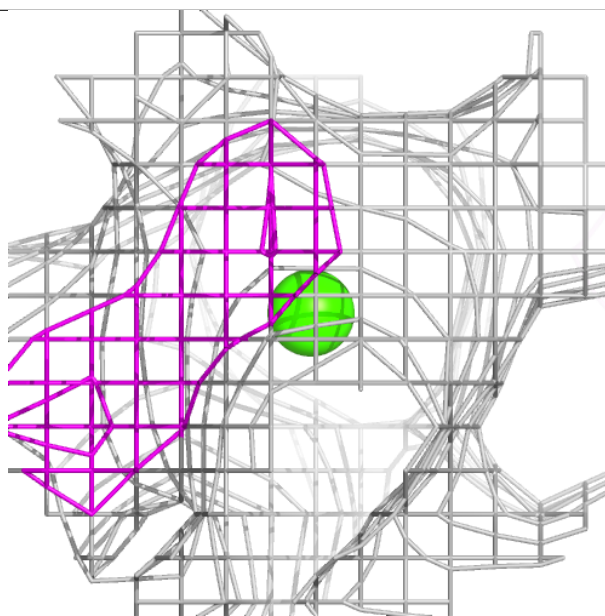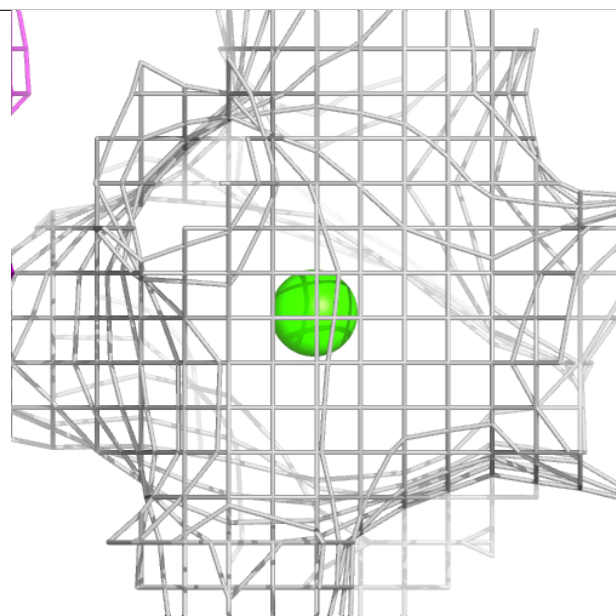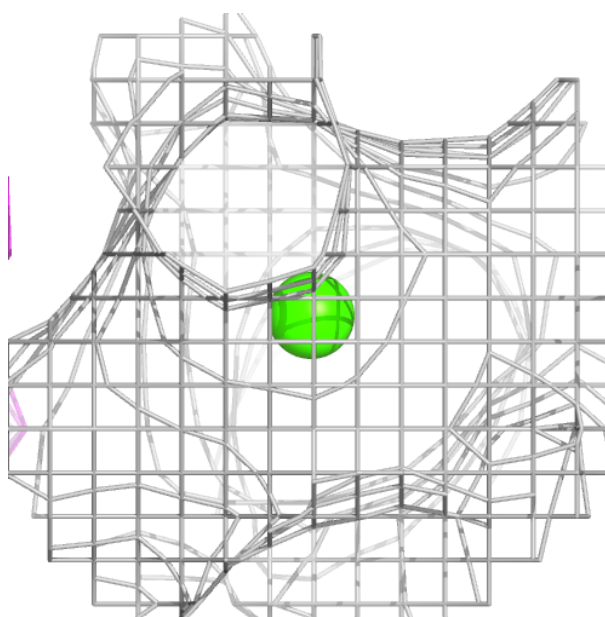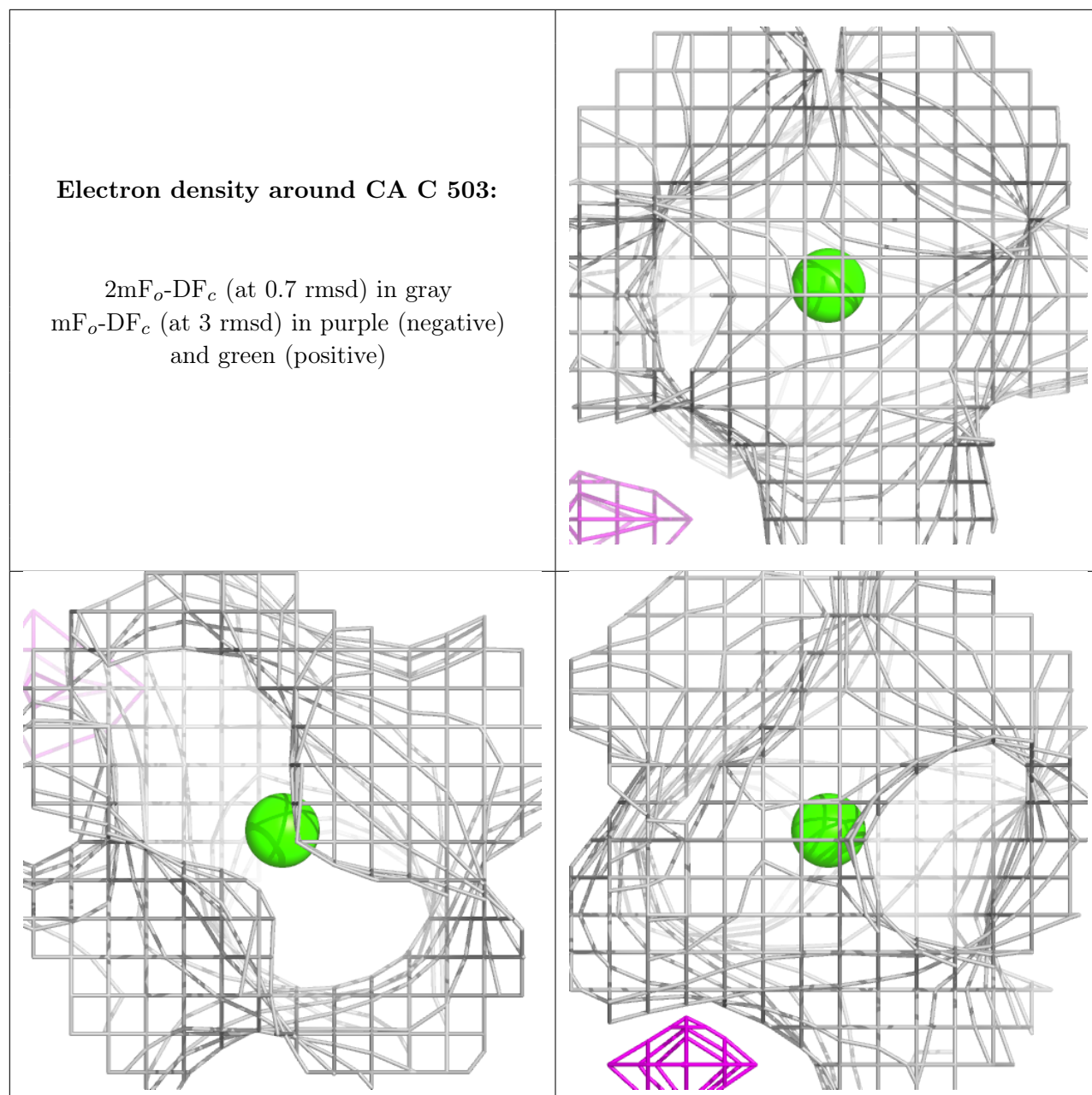
Electron density around CA B 504:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)
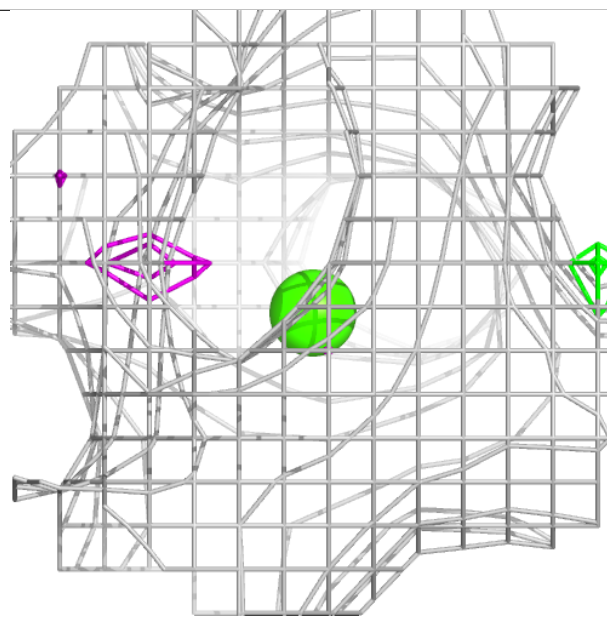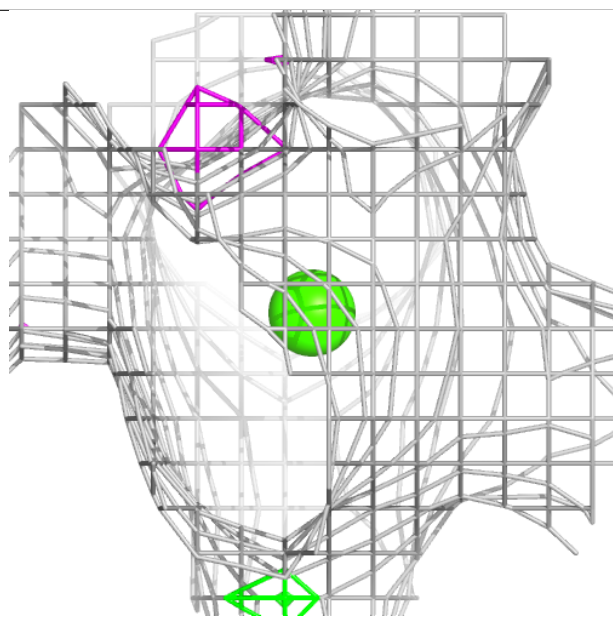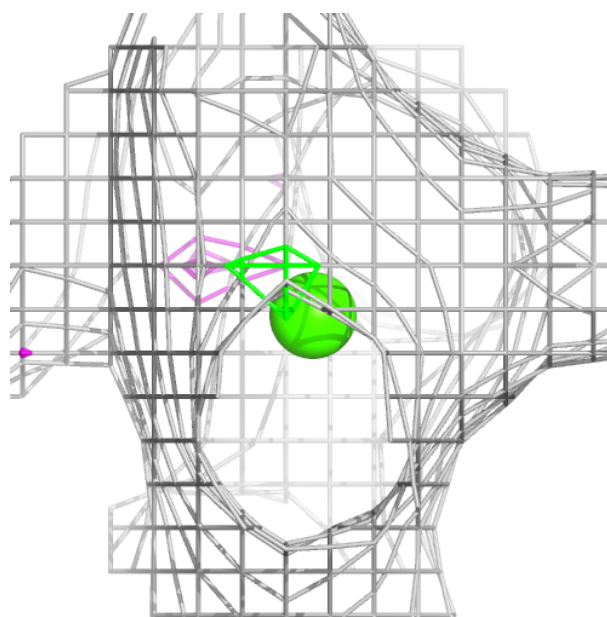
Electron density around CA B 505:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)

Electron density around CA C 503:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)

6.5 Other polymers ⓘ

There are no such residues in this entry.