



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 9, 2025 – 12:08 am GMT

PDB ID : 9H4E
Title : trans-aconitate decarboxylase Tad1- wild type binding with glycerol
Authors : Zheng, L.; Bang, G.
Deposited on : 2024-10-18
Resolution : 2.35 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
Mogul : 1.8.4, CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 3.0
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4 : 9.0.003 (Gargrove)
Density-Fitness : 1.0.11
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.41

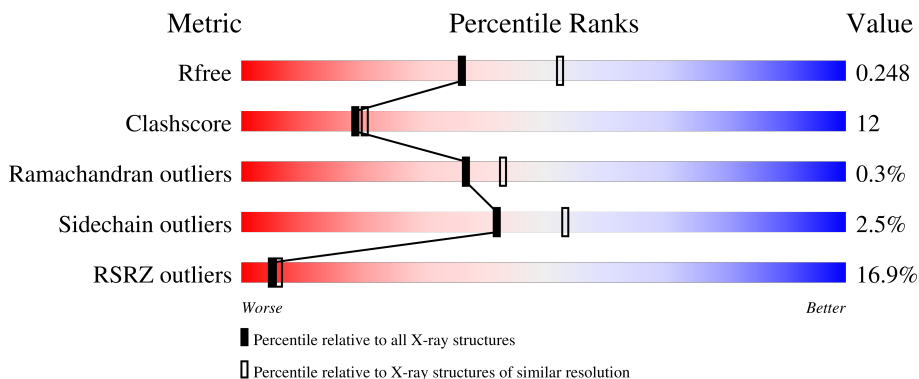
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.35 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}	164625	1460 (2.36-2.36)
Clashscore	180529	1571 (2.36-2.36)
Ramachandran outliers	177936	1559 (2.36-2.36)
Sidechain outliers	177891	1559 (2.36-2.36)
RSRZ outliers	164620	1460 (2.36-2.36)

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	493	
1	B	493	
1	C	493	
1	D	493	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard

residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	GOL	D	501	-	X	-	-

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 12733 atoms, of which 24 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 Trans-aconitate decarboxylase 1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	B	404	3128	1966	553	587	22	0	0	0
1	A	406	3148	1981	555	590	22	0	0	0
1	C	401	3104	1949	549	584	22	0	0	0
1	D	419	3257	2052	574	609	22	0	0	0

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	315	PHE	ILE	conflict	UNP A0A0U2UYC4
A	315	PHE	ILE	conflict	UNP A0A0U2UYC4
C	315	PHE	ILE	conflict	UNP A0A0U2UYC4
D	315	PHE	ILE	conflict	UNP A0A0U2UYC4

- Molecule 2 is GLYCEROL (three-letter code: GOL) (formula: C₃H₈O₃) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf	
2	B	1	Total	C	O	0	0	
			6	3	3			
2	A	1	Total	C	H	O	0	0
			14	3	8	3		
2	C	1	Total	C	H	O	0	0
			14	3	8	3		
2	D	1	Total	C	H	O	0	0
			14	3	8	3		

- Molecule 3 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

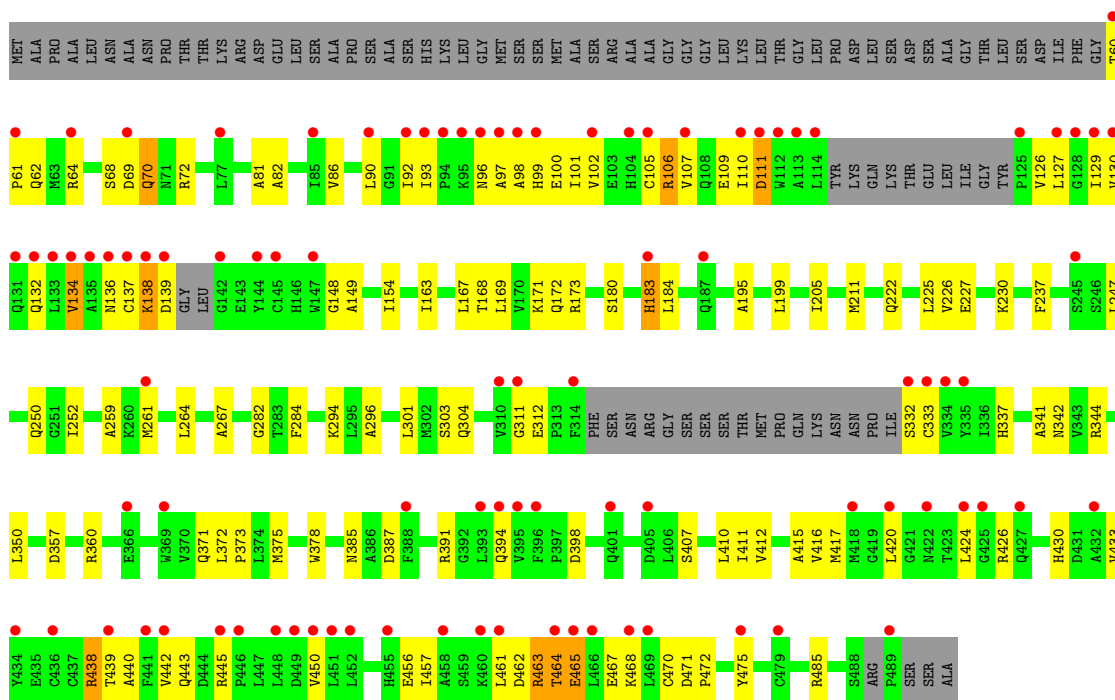
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	B	1	Total	Mg	0	0
			1	1		

- Molecule 4 is water.

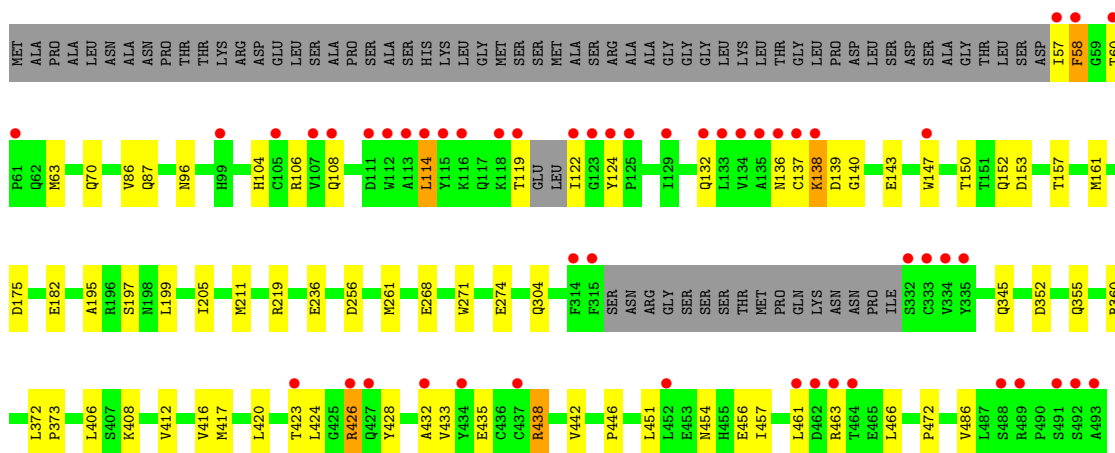
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	B	16	Total	O	0	0
			16	16		
4	A	13	Total	O	0	0
			13	13		
4	C	3	Total	O	0	0
			3	3		
4	D	15	Total	O	0	0
			15	15		



- Molecule 1: Trans-aconitate decarboxylase 1



- Molecule 1: Trans-aconitate decarboxylase 1



4 Data and refinement statistics i

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, α , β , γ	153.67Å 160.83Å 209.56Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	48.81 – 2.35 48.81 – 2.35	Depositor EDS
% Data completeness (in resolution range)	99.7 (48.81-2.35) 99.8 (48.81-2.35)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.16 (at 2.34Å)	Xtrriage
Refinement program	PHENIX 1.20.1_4487, PHENIX 1.20.1_4487	Depositor
R, R_{free}	0.227 , 0.253 0.225 , 0.248	Depositor DCC
R_{free} test set	5549 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å ²)	57.8	Xtrriage
Anisotropy	0.587	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.36 , 47.3	EDS
L-test for twinning ²	$\langle L \rangle = 0.51$, $\langle L^2 \rangle = 0.35$	Xtrriage
Estimated twinning fraction	0.012 for -k,-h,-l	Xtrriage
F_o, F_c correlation	0.95	EDS
Total number of atoms	12733	wwPDB-VP
Average B, all atoms (Å ²)	70.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.36% 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: GOL, 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	0.25	0/3206	0.50	1/4353 (0.0%)
1	B	0.26	0/3185	0.55	4/4324 (0.1%)
1	C	0.27	0/3158	0.52	0/4285
1	D	0.25	0/3318	0.47	0/4500
All	All	0.25	0/12867	0.51	5/17462 (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	A	0	1
1	C	0	2
1	D	0	1
All	All	0	4

There are no bond length outliers.

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	64	ARG	CA-CB-CG	7.73	130.41	113.40
1	A	143	GLU	CA-CB-CG	6.83	128.42	113.40
1	B	64	ARG	CB-CG-CD	-6.21	95.47	111.60
1	B	106	ARG	CB-CG-CD	5.53	125.97	111.60
1	B	106	ARG	CA-CB-CG	5.52	125.54	113.40

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	143	GLU	Peptide
1	C	438	ARG	Sidechain
1	C	465	GLU	Peptide
1	D	426	ARG	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	3148	0	3114	76	0
1	B	3128	0	3094	74	0
1	C	3104	0	3068	104	1
1	D	3257	0	3222	63	1
2	A	6	8	8	0	0
2	B	6	0	8	0	0
2	C	6	8	8	3	0
2	D	6	8	8	1	0
3	B	1	0	0	0	0
4	A	13	0	0	1	0
4	B	16	0	0	0	0
4	C	3	0	0	0	0
4	D	15	0	0	0	0
All	All	12709	24	12530	295	1

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 12.

All (295) 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:C:420:LEU:HD21	1:C:457:ILE:HG12	1.25	1.09
1:C:127:LEU:HA	1:C:130:VAL:HG12	1.41	1.00
1:C:417:MET:HE2	1:C:430:HIS:HA	1.47	0.94
1:A:126:VAL:HG22	1:A:151:THR:HG23	1.48	0.92
1:B:123:ILE:HG22	1:B:125:PRO:HD3	1.49	0.92
1:B:101:ILE:HD13	1:B:145:CYS:HB3	1.52	0.90
1:C:439:THR:O	1:C:443:GLN:HG3	1.77	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:130:VAL:O	1:A:134:VAL:HG12	1.77	0.84
1:D:70:GLN:OE1	1:D:70:GLN:N	2.11	0.82
1:A:127:LEU:HA	1:A:130:VAL:HG23	1.62	0.81
1:B:371:GLN:O	1:B:375:MET:HG3	1.80	0.80
1:C:440:ALA:HB2	1:C:450:VAL:HG11	1.64	0.80
1:C:110:ILE:O	1:C:110:ILE:HG13	1.81	0.79
1:C:412:VAL:HG11	1:C:472:PRO:HA	1.65	0.78
1:C:417:MET:HG3	1:C:433:VAL:HG11	1.64	0.78
1:B:393:LEU:HD12	1:B:394:GLN:H	1.48	0.78
1:C:420:LEU:HD12	1:C:461:LEU:HD12	1.66	0.77
1:A:355:GLN:HE22	1:C:337:HIS:CD2	2.03	0.77
1:B:417:MET:HE2	1:B:430:HIS:HA	1.65	0.76
1:B:158:ALA:O	1:B:162:GLN:HG3	1.86	0.76
1:C:61:PRO:HD2	1:C:62:GLN:OE1	1.86	0.76
1:C:127:LEU:HA	1:C:130:VAL:CG1	2.15	0.76
1:C:60:THR:O	1:C:64:ARG:HG3	1.86	0.76
1:B:427:GLN:HG3	1:B:430:HIS:HB3	1.68	0.75
1:C:97:ALA:O	1:C:101:ILE:HG13	1.85	0.75
1:A:200:LYS:NZ	4:A:601:HOH:O	2.19	0.74
1:A:360:ARG:HH11	1:A:360:ARG:HG3	1.50	0.74
1:C:417:MET:CG	1:C:433:VAL:HG11	2.17	0.73
1:B:464:THR:O	1:B:468:LYS:HG3	1.88	0.73
1:D:182:GLU:OE2	1:D:219:ARG:NH2	2.22	0.72
1:C:127:LEU:CA	1:C:130:VAL:HG12	2.20	0.72
1:D:132:GLN:O	1:D:136:ASN:HB2	1.90	0.71
1:C:100:GLU:HG3	1:C:137:CYS:HB2	1.71	0.71
1:D:150:THR:HG21	1:D:360:ARG:HH12	1.54	0.71
1:B:106:ARG:HB2	1:B:109:GLU:HG3	1.73	0.70
1:B:97:ALA:O	1:B:101:ILE:HG13	1.90	0.70
1:A:355:GLN:HE22	1:C:337:HIS:HD2	1.37	0.70
1:D:417:MET:HG3	1:D:433:VAL:HG11	1.74	0.70
1:A:219:ARG:NH1	1:A:486:VAL:O	2.26	0.68
1:C:420:LEU:CD1	1:C:461:LEU:HD12	2.24	0.68
1:B:412:VAL:HG11	1:B:472:PRO:HA	1.75	0.68
1:A:152:GLN:HB2	1:A:360:ARG:HH21	1.59	0.68
1:C:464:THR:O	1:C:467:GLU:HB2	1.93	0.67
1:B:344:ARG:NH1	1:A:352:ASP:OD2	2.27	0.67
1:A:227:GLU:OE2	1:C:230:LYS:NZ	2.22	0.67
1:C:167:LEU:O	1:C:171:LYS:HG3	1.95	0.67
1:B:413:SER:O	1:B:417:MET:HG3	1.95	0.66
1:B:452:LEU:HD11	1:B:463:ARG:HG3	1.76	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:127:LEU:HA	1:A:130:VAL:CG2	2.25	0.66
1:A:77:LEU:HD11	1:A:110:ILE:HD11	1.78	0.65
1:A:140:GLY:O	1:A:143:GLU:HG2	1.96	0.65
1:D:57:ILE:HG23	1:D:58:PHE:N	2.10	0.65
1:C:312:GLU:OE2	1:C:332:SER:N	2.29	0.65
1:B:311:GLY:O	1:B:394:GLN:HB2	1.96	0.65
1:D:140:GLY:O	1:D:143:GLU:HG3	1.96	0.65
1:A:304:GLN:HG2	1:D:199:LEU:HB3	1.79	0.65
1:B:479:CYS:O	1:B:483:ILE:HG12	1.97	0.64
1:C:138:LYS:HD3	1:C:139:ASP:H	1.60	0.64
1:D:57:ILE:HG23	1:D:58:PHE:H	1.63	0.64
1:C:92:ILE:HD11	1:C:250:GLN:HG3	1.80	0.63
1:B:464:THR:HG23	1:B:465:GLU:HG3	1.80	0.63
1:C:311:GLY:N	1:C:394:GLN:HB2	2.13	0.63
1:B:310:VAL:HA	1:B:394:GLN:O	1.99	0.63
1:C:69:ASP:HA	1:C:72:ARG:NH2	2.14	0.62
1:A:60:THR:O	1:A:64:ARG:HB2	1.99	0.62
1:B:427:GLN:HG3	1:B:430:HIS:CB	2.28	0.62
1:C:416:VAL:HG12	1:C:433:VAL:HG21	1.82	0.62
1:A:126:VAL:CG2	1:A:151:THR:HG23	2.27	0.61
1:A:101:ILE:HD13	1:A:145:CYS:HB3	1.81	0.61
1:A:360:ARG:HG3	1:A:360:ARG:NH1	2.13	0.61
1:C:465:GLU:HB3	1:C:468:LYS:HG3	1.81	0.61
1:B:107:VAL:HA	1:B:110:ILE:HD11	1.83	0.61
1:C:462:ASP:OD2	1:C:464:THR:OG1	2.19	0.61
1:C:311:GLY:H	1:C:394:GLN:HB2	1.66	0.60
1:A:107:VAL:HA	1:A:110:ILE:CD1	2.31	0.60
1:C:127:LEU:HD23	1:C:130:VAL:HG11	1.82	0.60
1:C:332:SER:OG	1:C:385:ASN:OD1	2.03	0.60
1:D:417:MET:HG3	1:D:433:VAL:CG1	2.32	0.60
1:A:231:ARG:NH2	1:A:280:GLU:OE2	2.33	0.59
1:C:467:GLU:O	1:C:470:CYS:N	2.35	0.59
1:C:130:VAL:O	1:C:134:VAL:HG12	2.02	0.59
1:A:132:GLN:O	1:A:136:ASN:HB2	2.01	0.59
1:B:112:TRP:O	1:B:113:ALA:CB	2.51	0.59
1:D:438:ARG:O	1:D:442:VAL:HG23	2.02	0.59
1:C:69:ASP:HA	1:C:72:ARG:HH21	1.66	0.59
1:C:360:ARG:HH12	2:C:501:GOL:C2	2.15	0.58
1:C:420:LEU:HD21	1:C:457:ILE:CG1	2.16	0.58
1:A:199:LEU:HB3	1:D:304:GLN:HG2	1.84	0.58
1:C:106:ARG:HB2	1:C:109:GLU:HG3	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:82:ALA:O	1:C:86:VAL:HG22	2.03	0.58
1:B:200:LYS:HE2	1:C:303:SER:O	2.03	0.57
1:A:195:ALA:HB2	1:A:205:ILE:HG12	1.86	0.57
1:A:81:ALA:HB1	1:A:102:VAL:HG22	1.86	0.57
1:D:157:THR:O	1:D:161:MET:HG3	2.05	0.57
1:B:64:ARG:O	1:B:67:TRP:N	2.38	0.56
1:D:416:VAL:HG12	1:D:433:VAL:HG21	1.87	0.56
1:A:223:GLN:NE2	1:C:230:LYS:HZ2	2.04	0.56
1:D:114:LEU:HD13	1:D:114:LEU:O	2.06	0.56
1:D:211:MET:HA	1:D:211:MET:CE	2.35	0.56
1:D:152:GLN:HG3	2:D:501:GOL:O2	2.06	0.55
1:C:360:ARG:NH1	2:C:501:GOL:O2	2.29	0.55
1:C:371:GLN:O	1:C:375:MET:HG3	2.07	0.55
1:D:457:ILE:O	1:D:461:LEU:HB2	2.07	0.55
1:B:282:GLY:HA3	1:B:350:LEU:HD12	1.89	0.55
1:D:104:HIS:HD2	1:D:137:CYS:HA	1.71	0.55
1:B:407:SER:HB2	1:B:410:LEU:HB2	1.89	0.55
1:D:150:THR:HG21	1:D:360:ARG:NH1	2.20	0.55
1:B:97:ALA:O	1:B:101:ILE:N	2.21	0.54
1:C:132:GLN:O	1:C:136:ASN:HB2	2.07	0.54
1:A:485:ARG:NH1	1:C:267:ALA:O	2.38	0.54
1:D:150:THR:CG2	1:D:360:ARG:HH12	2.21	0.54
1:B:393:LEU:HD12	1:B:394:GLN:N	2.20	0.54
1:B:311:GLY:CA	1:B:394:GLN:HB2	2.38	0.53
1:A:424:LEU:CD1	1:A:457:ILE:HD13	2.38	0.53
1:C:62:GLN:H	1:C:62:GLN:CD	2.11	0.53
1:C:463:ARG:O	1:C:467:GLU:OE1	2.26	0.53
1:C:465:GLU:HA	1:C:467:GLU:N	2.22	0.53
1:D:219:ARG:NH1	1:D:486:VAL:O	2.42	0.53
1:D:461:LEU:HD12	1:D:466:LEU:HG	1.90	0.53
1:D:435:GLU:OE1	1:D:438:ARG:NH1	2.42	0.53
1:D:236:GLU:HA	1:D:236:GLU:OE1	2.08	0.53
1:A:186:GLU:OE1	1:A:189:ARG:NH2	2.32	0.52
1:B:107:VAL:O	1:B:107:VAL:HG22	2.10	0.52
1:B:144:TYR:OH	1:D:426:ARG:NH2	2.43	0.52
1:D:150:THR:HG22	1:D:153:ASP:OD2	2.09	0.52
1:A:211:MET:HE2	1:A:211:MET:HA	1.91	0.52
1:B:464:THR:CG2	1:B:465:GLU:HG3	2.40	0.52
1:A:211:MET:HA	1:A:211:MET:CE	2.40	0.52
1:C:148:GLY:HA3	1:C:247:LEU:HD21	1.91	0.52
1:D:60:THR:HG23	1:D:63:MET:H	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:143:GLU:HB2	1:A:144:TYR:CG	2.46	0.51
1:A:143:GLU:HB2	1:A:144:TYR:CD2	2.45	0.51
1:C:344:ARG:NH1	1:D:352:ASP:OD2	2.42	0.51
1:A:412:VAL:HG11	1:A:472:PRO:HA	1.91	0.51
1:C:416:VAL:CG1	1:C:433:VAL:HG21	2.40	0.51
1:C:439:THR:HA	1:C:442:VAL:HG22	1.91	0.51
1:B:413:SER:HB2	1:B:437:CYS:SG	2.51	0.51
1:A:478:GLN:OE1	1:C:252:ILE:HG13	2.10	0.51
1:B:106:ARG:CB	1:B:109:GLU:HG3	2.41	0.51
1:A:111:ASP:HB3	1:A:132:GLN:HE22	1.75	0.51
1:A:462:ASP:HB3	1:A:465:GLU:OE2	2.11	0.51
1:C:62:GLN:OE1	1:C:62:GLN:N	2.40	0.51
1:C:69:ASP:OD1	1:C:72:ARG:NH2	2.44	0.51
1:D:420:LEU:HB3	1:D:424:LEU:HD12	1.92	0.50
1:B:311:GLY:H	1:B:394:GLN:HB2	1.77	0.50
1:C:407:SER:HB2	1:C:410:LEU:HB2	1.93	0.50
1:C:417:MET:HE2	1:C:430:HIS:CA	2.32	0.50
1:B:123:ILE:HG22	1:B:125:PRO:CD	2.32	0.50
1:B:360:ARG:HG3	1:B:360:ARG:HH11	1.77	0.50
1:C:465:GLU:OE1	1:C:468:LYS:HD2	2.12	0.50
1:C:225:LEU:HD12	1:C:284:PHE:CZ	2.46	0.50
1:A:144:TYR:HA	1:A:147:TRP:CE3	2.47	0.50
1:A:134:VAL:HA	1:A:142:GLY:HA3	1.93	0.50
1:B:65:GLU:HA	1:B:68:SER:HB3	1.94	0.50
1:B:271:TRP:HA	1:B:274:GLU:OE1	2.12	0.50
1:B:300:LYS:HA	1:B:303:SER:OG	2.12	0.49
1:A:417:MET:HG2	1:A:433:VAL:CG2	2.42	0.49
1:B:96:ASN:HB3	1:B:141:LEU:HD13	1.94	0.49
1:C:93:ILE:HD11	1:C:98:ALA:HB2	1.94	0.49
1:B:167:LEU:O	1:B:171:LYS:HG3	2.12	0.49
1:B:199:LEU:HB3	1:C:304:GLN:HG2	1.94	0.49
1:A:408:LYS:HB3	1:A:446:PRO:HA	1.94	0.49
1:C:163:ILE:HD11	1:C:372:LEU:HD21	1.93	0.49
1:D:416:VAL:CG1	1:D:433:VAL:HG21	2.41	0.49
1:A:417:MET:HG2	1:A:433:VAL:HG21	1.94	0.49
1:C:127:LEU:CD2	1:C:130:VAL:HG11	2.42	0.49
1:C:195:ALA:HB2	1:C:205:ILE:HG12	1.95	0.49
1:B:216:ALA:HB1	1:D:268:GLU:HG3	1.93	0.49
1:A:443:GLN:HE21	1:A:445:ARG:HE	1.61	0.49
1:B:64:ARG:O	1:B:68:SER:N	2.46	0.48
1:B:311:GLY:C	1:B:394:GLN:HB2	2.33	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:415:ALA:HB2	1:B:475:TYR:CD1	2.49	0.48
1:C:168:THR:O	1:C:172:GLN:HG3	2.13	0.48
1:B:365:TRP:CE3	1:B:366:GLU:HG2	2.48	0.48
1:A:271:TRP:HA	1:A:274:GLU:OE1	2.13	0.48
1:C:227:GLU:O	1:C:230:LYS:HE3	2.14	0.48
1:C:259:ALA:HB1	1:C:264:LEU:O	2.14	0.48
1:C:442:VAL:HG23	1:C:443:GLN:HG2	1.95	0.48
1:D:138:LYS:HE3	1:D:139:ASP:OD2	2.14	0.48
1:B:360:ARG:HG3	1:B:360:ARG:NH1	2.28	0.48
1:D:106:ARG:HB3	1:D:108:GLN:OE1	2.12	0.48
1:D:417:MET:CG	1:D:433:VAL:HG11	2.42	0.48
1:C:372:LEU:HB3	1:C:373:PRO:HD3	1.95	0.47
1:C:424:LEU:HD21	1:C:456:GLU:HG2	1.95	0.47
1:B:311:GLY:N	1:B:394:GLN:HB2	2.29	0.47
1:B:365:TRP:HE3	1:B:366:GLU:HG2	1.80	0.47
1:A:142:GLY:O	1:A:143:GLU:C	2.52	0.47
1:A:282:GLY:HA3	1:A:350:LEU:HD12	1.96	0.47
1:C:296:ALA:HB1	1:C:333:CYS:HB3	1.96	0.47
1:C:468:LYS:HA	1:C:471:ASP:HB2	1.95	0.47
1:A:427:GLN:HG3	1:A:428:TYR:N	2.30	0.47
1:C:92:ILE:HG22	1:C:93:ILE:HG23	1.96	0.47
1:D:195:ALA:HB2	1:D:205:ILE:HG12	1.97	0.47
1:B:415:ALA:HB2	1:B:475:TYR:CG	2.50	0.47
1:C:62:GLN:HB2	1:C:169:LEU:HD21	1.96	0.47
1:B:97:ALA:C	1:B:101:ILE:HG13	2.35	0.46
1:B:438:ARG:C	1:B:438:ARG:HD2	2.35	0.46
1:A:445:ARG:HH22	1:A:453:GLU:CD	2.18	0.46
1:C:106:ARG:HA	1:C:106:ARG:HD3	1.45	0.46
1:D:428:TYR:CE1	1:D:432:ALA:HB2	2.51	0.46
1:C:417:MET:HG2	1:C:433:VAL:HG11	1.98	0.46
1:B:352:ASP:OD2	1:A:344:ARG:NH1	2.49	0.46
1:C:68:SER:C	1:C:70:GLN:H	2.19	0.46
1:D:96:ASN:H	1:D:96:ASN:HD22	1.62	0.46
1:B:195:ALA:HB2	1:B:205:ILE:HG12	1.97	0.45
1:D:150:THR:HG22	1:D:153:ASP:CG	2.35	0.45
1:A:70:GLN:HG3	1:A:112:TRP:CZ2	2.51	0.45
1:A:127:LEU:O	1:A:131:GLN:HG3	2.16	0.45
1:B:293:ALA:HB1	1:D:355:GLN:HG3	1.99	0.45
1:A:211:MET:HE2	1:A:214:PHE:HD2	1.81	0.45
1:A:72:ARG:HD2	1:A:76:TYR:OH	2.17	0.45
1:A:443:GLN:NE2	1:A:445:ARG:HE	2.15	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:464:THR:HG23	1:B:465:GLU:CG	2.46	0.45
1:A:462:ASP:CG	1:A:463:ARG:H	2.19	0.45
1:C:222:GLN:O	1:C:226:VAL:HG23	2.16	0.45
1:A:87:GLN:OE1	1:A:147:TRP:HB3	2.16	0.45
1:C:282:GLY:HA3	1:C:350:LEU:HD12	1.99	0.45
1:D:211:MET:HA	1:D:211:MET:HE2	1.99	0.45
1:B:150:THR:HG22	1:B:153:ASP:OD2	2.17	0.44
1:C:438:ARG:O	1:C:442:VAL:HG13	2.17	0.44
1:A:73:VAL:HG23	1:A:107:VAL:HG23	2.00	0.44
1:B:130:VAL:HA	1:B:133:LEU:HB2	1.99	0.44
1:C:60:THR:C	1:C:64:ARG:HG3	2.38	0.44
1:C:465:GLU:HA	1:C:467:GLU:H	1.82	0.44
1:D:408:LYS:HB3	1:D:446:PRO:HA	1.99	0.44
1:D:412:VAL:HG11	1:D:472:PRO:HA	1.98	0.44
1:D:423:THR:HG21	1:D:461:LEU:HD21	2.00	0.44
1:C:180:SER:O	1:C:183:HIS:HB2	2.16	0.44
1:C:184:LEU:HB3	1:C:211:MET:HG3	2.00	0.44
1:B:443:GLN:OE1	1:B:445:ARG:HD3	2.17	0.44
1:C:149:ALA:HB2	1:C:237:PHE:HE1	1.83	0.44
1:B:173:ARG:NH2	1:B:384:ASN:OD1	2.50	0.44
1:B:485:ARG:HH22	1:D:256:ASP:CG	2.20	0.44
1:A:136:ASN:HD22	1:A:136:ASN:C	2.20	0.44
1:A:433:VAL:O	1:A:437:CYS:N	2.46	0.44
1:D:57:ILE:HG13	1:D:58:PHE:CD2	2.53	0.44
1:D:416:VAL:HG11	1:D:451:LEU:HD11	1.99	0.44
1:D:454:ASN:OD1	1:D:457:ILE:HG13	2.18	0.43
1:B:86:VAL:HG13	1:B:257:ALA:HB3	2.01	0.43
1:B:133:LEU:HA	1:B:133:LEU:HD23	1.78	0.43
1:D:87:GLN:OE1	1:D:147:TRP:HB3	2.18	0.43
1:B:366:GLU:OE2	1:A:335:TYR:CD1	2.71	0.43
1:C:129:ILE:N	1:C:129:ILE:HD12	2.34	0.43
1:A:413:SER:HB2	1:A:437:CYS:SG	2.59	0.43
1:D:86:VAL:HG23	1:D:261:MET:HG3	2.00	0.43
1:A:110:ILE:HG23	1:A:132:GLN:OE1	2.19	0.43
1:A:256:ASP:OD2	1:C:485:ARG:NH2	2.40	0.43
1:B:285:LEU:HD22	1:B:379:THR:HG21	2.01	0.43
1:A:90:LEU:HB2	1:A:92:ILE:HD12	2.00	0.43
1:D:57:ILE:HG13	1:D:58:PHE:H	1.83	0.43
1:B:107:VAL:HG12	1:B:108:GLN:OE1	2.18	0.42
1:A:73:VAL:HG21	1:A:112:TRP:CH2	2.54	0.42
1:A:371:GLN:O	1:A:375:MET:HG3	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:411:ILE:HG23	1:C:412:VAL:HG13	2.01	0.42
1:C:387:ASP:O	1:C:391:ARG:HB2	2.19	0.42
1:A:127:LEU:CA	1:A:130:VAL:HG23	2.40	0.42
1:C:86:VAL:CG1	1:C:261:MET:HG3	2.49	0.42
1:C:199:LEU:HD21	1:C:301:LEU:HD13	2.00	0.42
1:C:111:ASP:OD2	1:C:111:ASP:C	2.57	0.42
1:B:243:ASN:OD1	1:B:243:ASN:N	2.52	0.42
1:C:341:ALA:HA	1:C:344:ARG:CZ	2.49	0.42
1:C:360:ARG:NH1	2:C:501:GOL:O1	2.52	0.42
1:C:342:ASN:HB3	1:C:378:TRP:CZ3	2.55	0.42
1:D:96:ASN:H	1:D:96:ASN:ND2	2.15	0.42
1:A:364:PRO:HA	1:A:367:ILE:HD12	2.02	0.42
1:C:173:ARG:NH1	1:C:387:ASP:OD2	2.53	0.42
1:D:372:LEU:HB3	1:D:373:PRO:HD3	2.02	0.42
1:A:209:PHE:N	1:A:483:ILE:HD11	2.35	0.41
1:A:434:TYR:CD2	1:A:434:TYR:C	2.93	0.41
1:D:271:TRP:HA	1:D:274:GLU:OE1	2.20	0.41
1:D:438:ARG:H	1:D:438:ARG:HG2	1.61	0.41
1:B:127:LEU:HA	1:B:130:VAL:HG22	2.01	0.41
1:D:122:ILE:N	1:D:122:ILE:HD13	2.35	0.41
1:B:339:CYS:O	1:B:343:VAL:HG23	2.20	0.41
1:B:343:VAL:HG13	1:B:375:MET:HE3	2.01	0.41
1:A:144:TYR:HA	1:A:147:TRP:HE3	1.84	0.41
1:C:98:ALA:O	1:C:102:VAL:HG23	2.21	0.41
1:D:372:LEU:HD12	1:D:372:LEU:HA	1.86	0.41
1:D:417:MET:CG	1:D:433:VAL:CG1	2.98	0.41
1:A:256:ASP:CG	1:C:485:ARG:HH22	2.23	0.41
1:B:360:ARG:HB2	1:D:197:SER:CB	2.51	0.41
1:A:356:SER:O	1:C:294:LYS:HG3	2.20	0.41
1:A:357:ASP:OD1	1:A:357:ASP:N	2.40	0.41
1:C:415:ALA:HB2	1:C:475:TYR:CG	2.56	0.41
1:A:313:PRO:HG2	1:A:388:PHE:CE2	2.56	0.41
1:C:81:ALA:HB2	1:C:105:CYS:SG	2.61	0.41
1:D:435:GLU:HA	1:D:438:ARG:HG2	2.02	0.41
1:B:110:ILE:HD12	1:B:110:ILE:H	1.86	0.40
1:C:126:VAL:HG21	1:C:154:ILE:HB	2.03	0.40
1:D:345:GLN:HA	1:D:345:GLN:NE2	2.36	0.40
1:D:406:LEU:HD23	1:D:406:LEU:HA	1.94	0.40
1:A:372:LEU:HD12	1:A:372:LEU:HA	1.85	0.40
1:D:119:THR:HG23	1:D:124:TYR:H	1.84	0.40
1:B:126:VAL:HG21	1:B:154:ILE:HB	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:86:VAL:O	1:C:90:LEU:HD23	2.21	0.40

All (1) 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)
1:C:426:ARG:NH2	1:D:456:GLU:OE2[8_456]	2.18	0.02

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	400/493 (81%)	383 (96%)	14 (4%)	3 (1%)	16	17
1	B	398/493 (81%)	377 (95%)	20 (5%)	1 (0%)	37	43
1	C	393/493 (80%)	369 (94%)	23 (6%)	1 (0%)	37	43
1	D	413/493 (84%)	400 (97%)	13 (3%)	0	100	100
All	All	1604/1972 (81%)	1529 (95%)	70 (4%)	5 (0%)	37	43

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	183	HIS
1	A	143	GLU
1	A	69	ASP
1	A	125	PRO
1	B	488	SER

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	333/404 (82%)	328 (98%)	5 (2%)	60	73
1	B	331/404 (82%)	321 (97%)	10 (3%)	36	46
1	C	329/404 (81%)	316 (96%)	13 (4%)	27	34
1	D	344/404 (85%)	338 (98%)	6 (2%)	56	69
All	All	1337/1616 (83%)	1303 (98%)	34 (2%)	42	53

All (34) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	70	GLN
1	B	89	ASP
1	B	106	ARG
1	B	133	LEU
1	B	134	VAL
1	B	200	LYS
1	B	300	LYS
1	B	332	SER
1	B	357	ASP
1	B	426	ARG
1	A	64	ARG
1	A	104	HIS
1	A	130	VAL
1	A	136	ASN
1	A	332	SER
1	C	70	GLN
1	C	96	ASN
1	C	99	HIS
1	C	106	ARG
1	C	107	VAL
1	C	111	ASP
1	C	134	VAL
1	C	138	LYS
1	C	357	ASP

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Mol	Chain	Res	Type
1	C	398	ASP
1	C	445	ARG
1	C	463	ARG
1	C	464	THR
1	D	58	PHE
1	D	114	LEU
1	D	138	LYS
1	D	175	ASP
1	D	438	ARG
1	D	463	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (13) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	162	GLN
1	B	345	GLN
1	A	132	GLN
1	A	223	GLN
1	A	345	GLN
1	A	443	GLN
1	C	337	HIS
1	C	345	GLN
1	D	96	ASN
1	D	104	HIS
1	D	152	GLN
1	D	345	GLN
1	D	384	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 oligosaccharides in this entry.

5.6 Ligand geometry

Of 5 ligands modelled in this entry, 1 is monoatomic - leaving 4 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	GOL	A	501	-	5,5,5	0.52	0	5,5,5	1.02	0
2	GOL	D	501	-	5,5,5	0.97	0	5,5,5	1.79	2 (40%)
2	GOL	C	501	-	5,5,5	0.71	0	5,5,5	1.19	1 (20%)
2	GOL	B	501	-	5,5,5	1.04	0	5,5,5	1.19	1 (20%)

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	GOL	A	501	-	-	4/4/4/4	-
2	GOL	D	501	-	-	4/4/4/4	-
2	GOL	C	501	-	-	2/4/4/4	-
2	GOL	B	501	-	-	4/4/4/4	-

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	501	GOL	O3-C3-C2	-2.30	99.18	110.20
2	D	501	GOL	O1-C1-C2	-2.29	99.23	110.20
2	B	501	GOL	C3-C2-C1	-2.27	102.87	111.70
2	C	501	GOL	C3-C2-C1	-2.04	103.79	111.70

There are no chirality outliers.

All (14) torsion outliers are listed below:

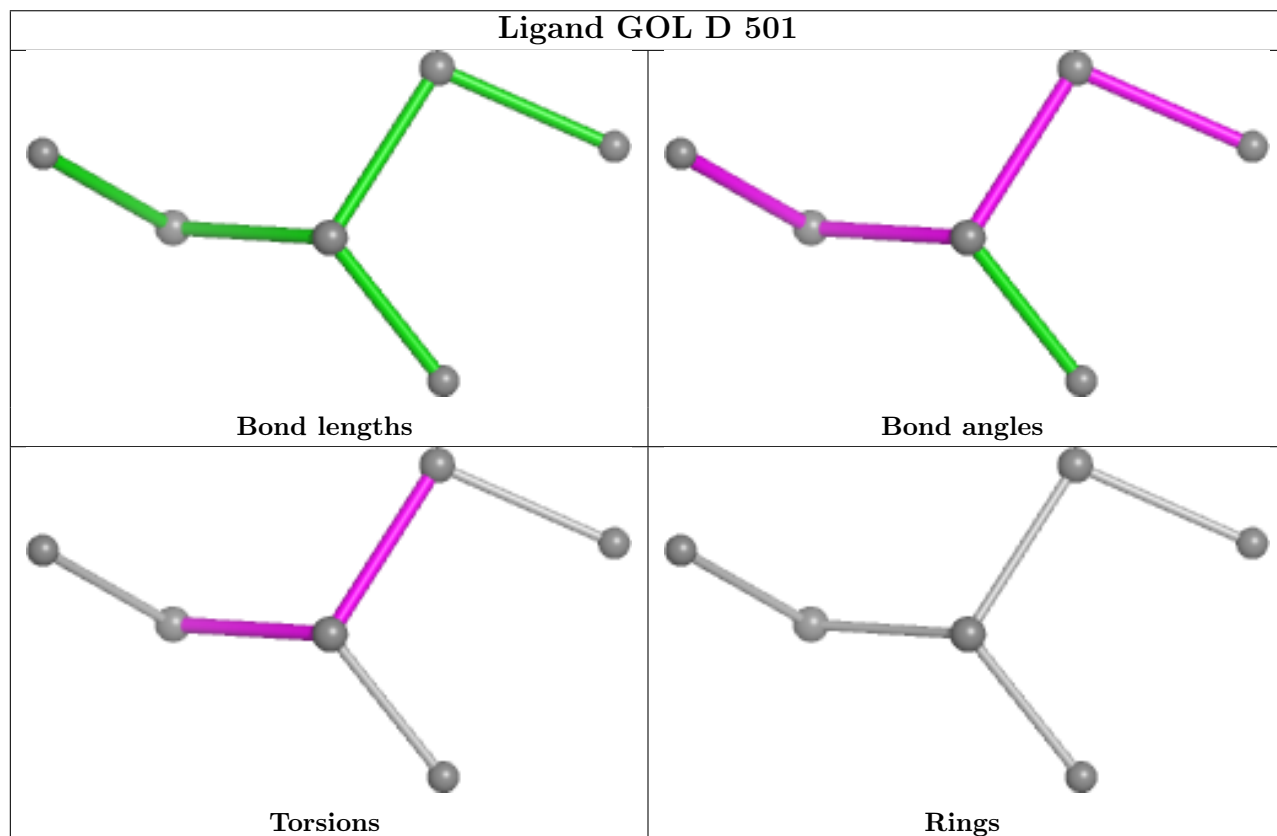
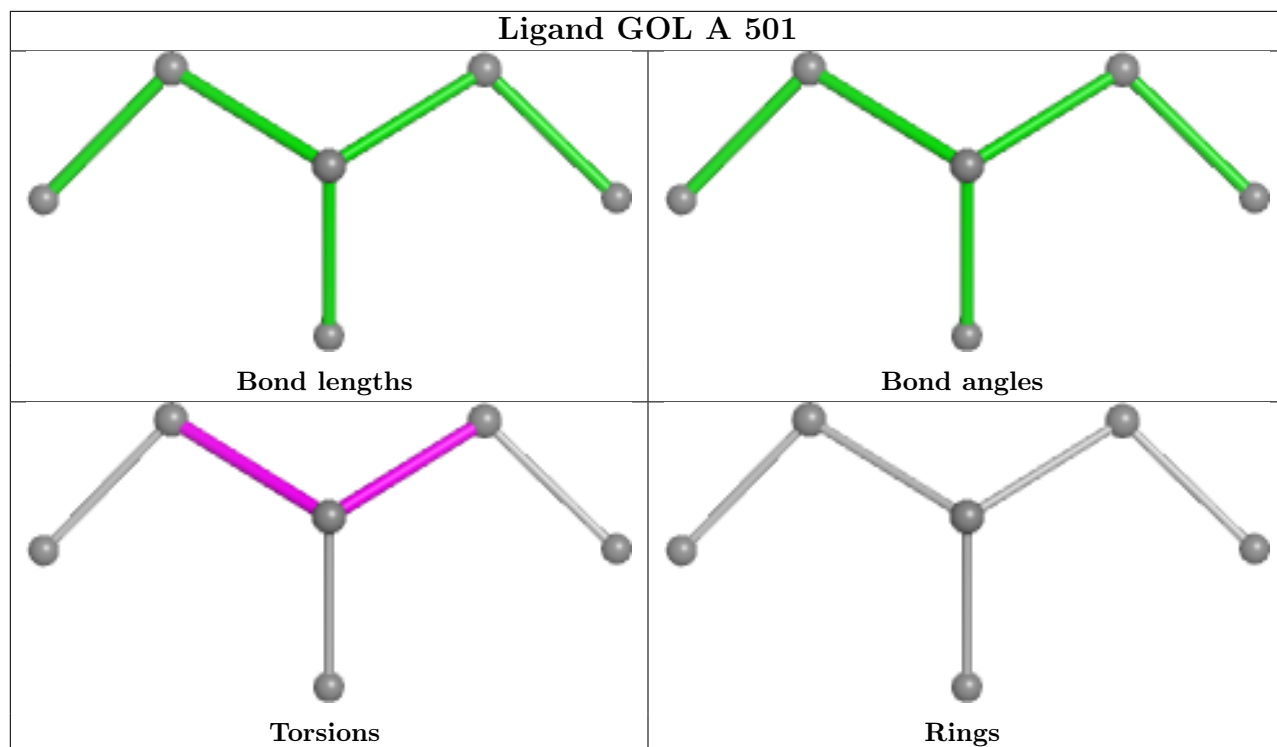
Mol	Chain	Res	Type	Atoms
2	B	501	GOL	C1-C2-C3-O3
2	A	501	GOL	O1-C1-C2-C3
2	C	501	GOL	O1-C1-C2-C3
2	D	501	GOL	C1-C2-C3-O3
2	D	501	GOL	O1-C1-C2-O2
2	D	501	GOL	O1-C1-C2-C3
2	B	501	GOL	O2-C2-C3-O3
2	C	501	GOL	O1-C1-C2-O2
2	D	501	GOL	O2-C2-C3-O3
2	A	501	GOL	O2-C2-C3-O3
2	B	501	GOL	O1-C1-C2-O2
2	A	501	GOL	O1-C1-C2-O2
2	B	501	GOL	O1-C1-C2-C3
2	A	501	GOL	C1-C2-C3-O3

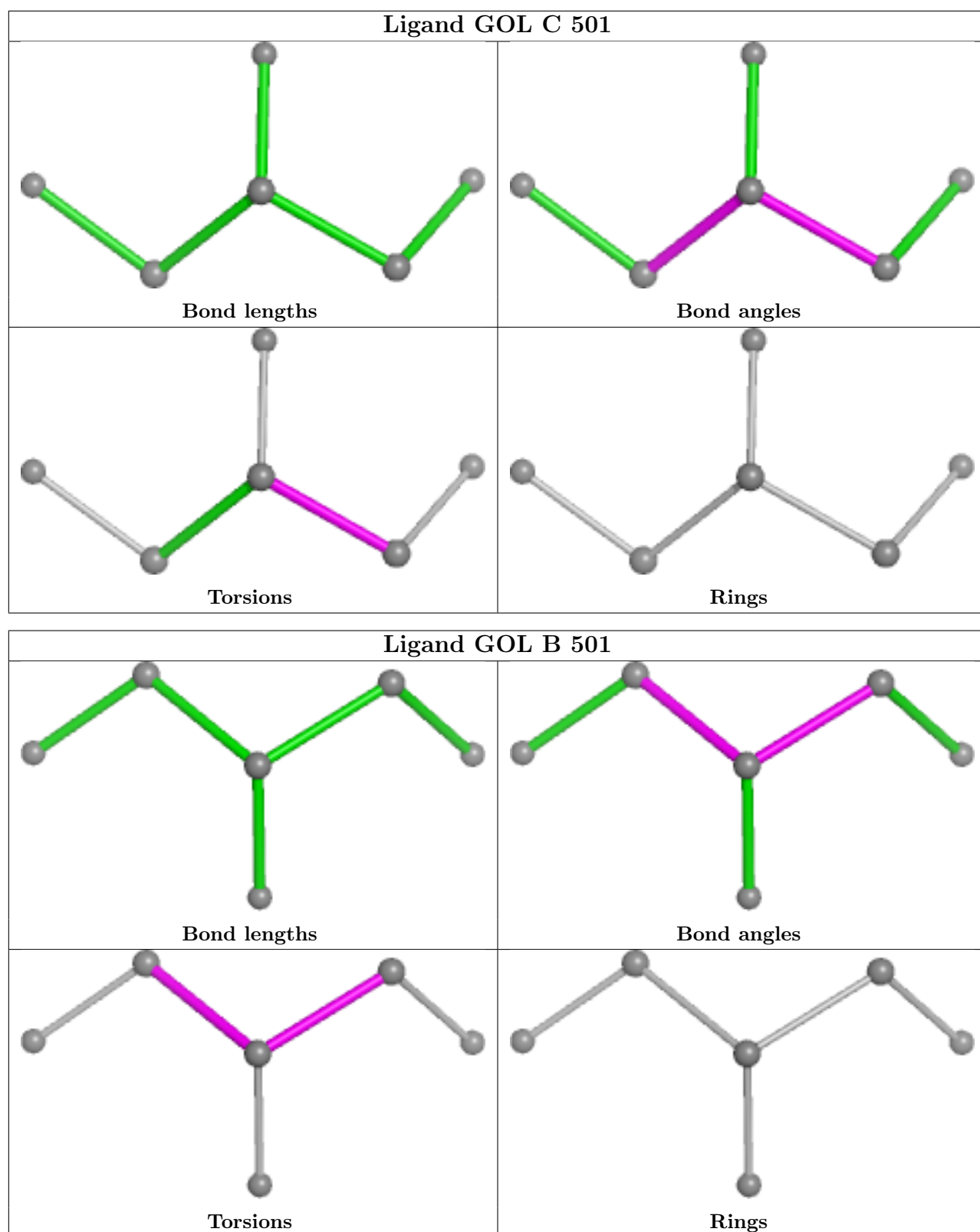
There are no ring outliers.

2 monomers are involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	D	501	GOL	1	0
2	C	501	GOL	3	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.





5.7 Other polymers [\(i\)](#)

There are no such residues in this entry.

5.8 Polymer linkage issues

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	406/493 (82%)	0.92	59 (14%) 7 8	49, 66, 103, 114	0
1	B	404/493 (81%)	0.98	73 (18%) 4 5	43, 66, 102, 127	0
1	C	401/493 (81%)	1.30	93 (23%) 2 2	49, 73, 122, 144	0
1	D	419/493 (84%)	0.72	51 (12%) 10 12	43, 59, 97, 132	0
All	All	1630/1972 (82%)	0.98	276 (16%) 5 6	43, 66, 107, 144	0

All (276) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	114	LEU	11.1
1	C	311	GLY	9.7
1	B	113	ALA	9.2
1	D	57	ILE	8.8
1	A	123	ILE	8.5
1	B	107	VAL	7.9
1	D	58	PHE	7.9
1	D	315	PHE	7.1
1	C	489	PRO	7.1
1	A	461	LEU	6.7
1	C	314	PHE	6.1
1	C	125	PRO	6.1
1	B	123	ILE	6.1
1	D	114	LEU	5.8
1	C	112	TRP	5.7
1	A	143	GLU	5.5
1	D	124	TYR	5.4
1	C	107	VAL	5.4
1	C	142	GLY	5.1
1	A	115	TYR	5.0
1	B	489	PRO	5.0

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Mol	Chain	Res	Type	RSRZ
1	A	135	ALA	5.0
1	C	135	ALA	4.9
1	A	489	PRO	4.9
1	B	135	ALA	4.8
1	B	134	VAL	4.8
1	B	112	TRP	4.8
1	C	439	THR	4.8
1	D	122	ILE	4.7
1	C	110	ILE	4.6
1	D	119	THR	4.6
1	D	493	ALA	4.6
1	C	113	ALA	4.5
1	A	114	LEU	4.5
1	C	394	GLN	4.4
1	C	60	THR	4.4
1	C	465	GLU	4.4
1	C	129	ILE	4.4
1	C	139	ASP	4.3
1	A	134	VAL	4.3
1	C	102	VAL	4.3
1	B	64	ARG	4.3
1	B	140	GLY	4.3
1	D	491	SER	4.3
1	C	442	VAL	4.2
1	B	97	ALA	4.2
1	B	420	LEU	4.2
1	C	144	TYR	4.1
1	A	124	GLY	4.1
1	D	118	LYS	4.1
1	B	141	LEU	4.1
1	A	70	GLN	4.0
1	A	107	VAL	4.0
1	B	464	THR	4.0
1	B	423	THR	3.9
1	C	98	ALA	3.9
1	A	140	GLY	3.9
1	C	418	MET	3.8
1	D	113	ALA	3.8
1	A	139	ASP	3.8
1	C	134	VAL	3.8
1	B	300	LYS	3.7
1	A	59	GLY	3.7

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Mol	Chain	Res	Type	RSRZ
1	B	98	ALA	3.7
1	A	424	LEU	3.7
1	D	492	SER	3.6
1	B	59	GLY	3.6
1	C	92	ILE	3.6
1	D	314	PHE	3.6
1	C	99	HIS	3.6
1	D	461	LEU	3.6
1	D	333	CYS	3.5
1	D	135	ALA	3.5
1	B	143	GLU	3.5
1	B	461	LEU	3.4
1	B	394	GLN	3.4
1	D	138	LYS	3.4
1	C	434	TYR	3.4
1	C	183	HIS	3.4
1	B	144	TYR	3.3
1	C	464	THR	3.3
1	B	96	ASN	3.3
1	A	133	LEU	3.3
1	C	104	HIS	3.2
1	B	333	CYS	3.2
1	C	105	CYS	3.2
1	A	260	LYS	3.2
1	C	461	LEU	3.2
1	B	72	ARG	3.2
1	A	113	ALA	3.2
1	C	137	CYS	3.2
1	A	125	PRO	3.2
1	C	455	HIS	3.1
1	D	125	PRO	3.1
1	C	133	LEU	3.1
1	C	332	SER	3.1
1	A	460	LYS	3.1
1	C	138	LYS	3.1
1	B	139	ASP	3.1
1	B	332	SER	3.1
1	C	450	VAL	3.1
1	B	462	ASP	3.1
1	C	441	PHE	3.1
1	A	69	ASP	3.1
1	C	93	ILE	3.0

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Mol	Chain	Res	Type	RSRZ
1	D	137	CYS	3.0
1	C	424	LEU	3.0
1	B	458	ALA	3.0
1	D	134	VAL	3.0
1	C	95	LYS	3.0
1	B	125	PRO	3.0
1	C	369	TRP	3.0
1	C	310	VAL	3.0
1	C	449	ASP	3.0
1	C	466	LEU	3.0
1	A	129	ILE	2.9
1	D	147	TRP	2.9
1	D	452	LEU	2.9
1	D	60	THR	2.9
1	A	112	TRP	2.9
1	A	426	ARG	2.9
1	B	426	ARG	2.8
1	C	425	GLY	2.8
1	D	136	ASN	2.8
1	B	428	TYR	2.8
1	A	126	VAL	2.8
1	C	395	VAL	2.8
1	D	115	TYR	2.8
1	B	60	THR	2.8
1	C	136	ASN	2.8
1	A	332	SER	2.8
1	A	428	TYR	2.8
1	C	333	CYS	2.8
1	C	90	LEU	2.8
1	D	133	LEU	2.8
1	B	183	HIS	2.7
1	D	123	GLY	2.7
1	B	418	MET	2.7
1	C	393	LEU	2.7
1	C	245	SER	2.7
1	A	104	HIS	2.7
1	D	129	ILE	2.7
1	C	69	ASP	2.7
1	A	130	VAL	2.7
1	A	427	GLN	2.7
1	A	142	GLY	2.6
1	C	445	ARG	2.6

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Mol	Chain	Res	Type	RSRZ
1	C	468	LYS	2.6
1	D	426	ARG	2.6
1	A	144	TYR	2.6
1	C	127	LEU	2.6
1	C	469	LEU	2.6
1	D	464	THR	2.6
1	D	332	SER	2.6
1	B	132	GLN	2.6
1	A	394	GLN	2.6
1	C	427	GLN	2.6
1	B	311	GLY	2.6
1	B	334	VAL	2.6
1	D	107	VAL	2.6
1	C	335	TYR	2.6
1	B	129	ILE	2.6
1	D	488	SER	2.6
1	B	111	ASP	2.6
1	C	97	ALA	2.5
1	C	420	LEU	2.5
1	B	335	TYR	2.5
1	B	61	PRO	2.5
1	B	99	HIS	2.5
1	B	299	ILE	2.5
1	C	132	GLN	2.5
1	C	145	CYS	2.5
1	B	109	GLU	2.5
1	B	388	PHE	2.5
1	C	448	LEU	2.5
1	D	335	TYR	2.5
1	C	94	PRO	2.5
1	B	89	ASP	2.5
1	B	65	GLU	2.5
1	C	147	TRP	2.5
1	C	130	VAL	2.5
1	B	104	HIS	2.5
1	B	437	CYS	2.5
1	B	395	VAL	2.5
1	A	106	ARG	2.5
1	A	335	TYR	2.4
1	A	141	LEU	2.4
1	C	96	ASN	2.4
1	A	423	THR	2.4

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Mol	Chain	Res	Type	RSRZ
1	D	61	PRO	2.4
1	B	419	GLY	2.4
1	B	393	LEU	2.4
1	C	187	GLN	2.4
1	C	452	LEU	2.4
1	A	136	ASN	2.4
1	B	100	GLU	2.4
1	C	261	MET	2.4
1	A	95	LYS	2.4
1	B	137	CYS	2.4
1	D	132	GLN	2.4
1	C	366	GLU	2.4
1	B	95	LYS	2.4
1	B	110	ILE	2.4
1	B	133	LEU	2.4
1	B	136	ASN	2.4
1	C	432	ALA	2.4
1	C	77	LEU	2.3
1	C	85	ILE	2.3
1	A	455	HIS	2.3
1	B	124	GLY	2.3
1	C	131	GLN	2.3
1	D	434	TYR	2.3
1	B	127	LEU	2.3
1	C	460	LYS	2.3
1	B	145	CYS	2.3
1	C	396	PHE	2.3
1	D	437	CYS	2.3
1	C	111	ASP	2.3
1	C	451	LEU	2.3
1	C	458	ALA	2.3
1	A	313	PRO	2.3
1	A	418	MET	2.2
1	A	434	TYR	2.2
1	D	116	LYS	2.2
1	D	463	ARG	2.2
1	D	427	GLN	2.2
1	A	457	ILE	2.2
1	D	112	TRP	2.2
1	B	465	GLU	2.2
1	B	463	ARG	2.2
1	A	452	LEU	2.2

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Mol	Chain	Res	Type	RSRZ
1	A	432	ALA	2.2
1	C	388	PHE	2.2
1	D	462	ASP	2.2
1	A	110	ILE	2.2
1	A	417	MET	2.2
1	C	64	ARG	2.2
1	A	127	LEU	2.2
1	B	108	GLN	2.2
1	B	138	LYS	2.2
1	C	401	GLN	2.1
1	D	423	THR	2.1
1	C	128	GLY	2.1
1	A	137	CYS	2.1
1	C	479	CYS	2.1
1	D	489	ARG	2.1
1	B	369	TRP	2.1
1	C	446	PRO	2.1
1	A	62	GLN	2.1
1	D	108	GLN	2.1
1	D	111	ASP	2.1
1	A	421	GLY	2.1
1	A	488	SER	2.1
1	A	369	TRP	2.1
1	D	432	ALA	2.1
1	A	334	VAL	2.1
1	B	459	SER	2.1
1	B	455	HIS	2.1
1	D	99	HIS	2.1
1	C	422	ASN	2.1
1	B	267	ALA	2.1
1	A	465	GLU	2.0
1	B	442	VAL	2.0
1	C	334	VAL	2.0
1	D	334	VAL	2.0
1	B	142	GLY	2.0
1	C	405	ASP	2.0
1	B	488	SER	2.0
1	D	105	CYS	2.0
1	A	456	GLU	2.0
1	B	86	VAL	2.0
1	C	475	TYR	2.0
1	A	422	ASN	2.0

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Mol	Chain	Res	Type	RSRZ
1	C	61	PRO	2.0
1	A	333	CYS	2.0
1	C	436	CYS	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](#)

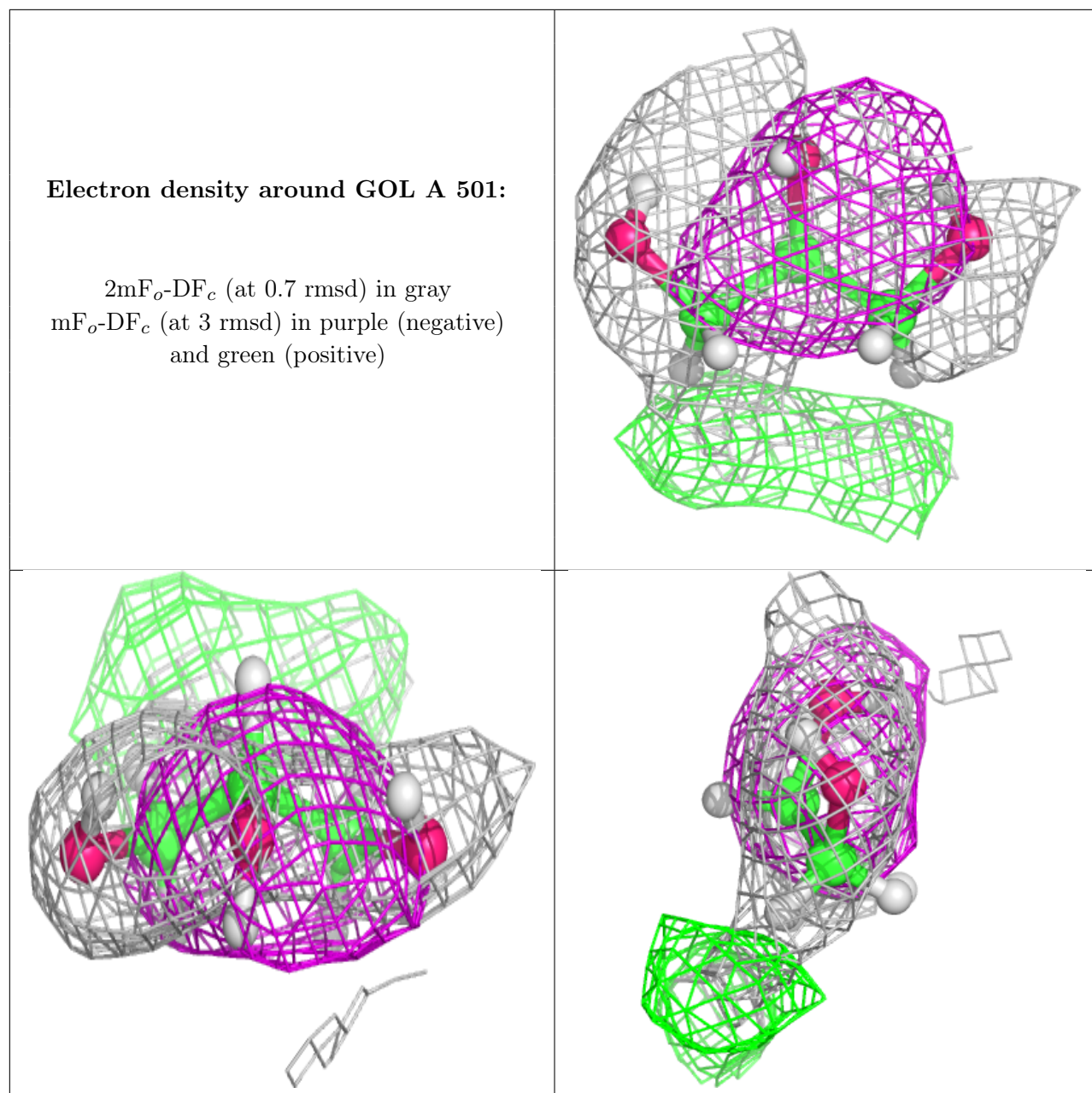
There are no monosaccharides in this entry.

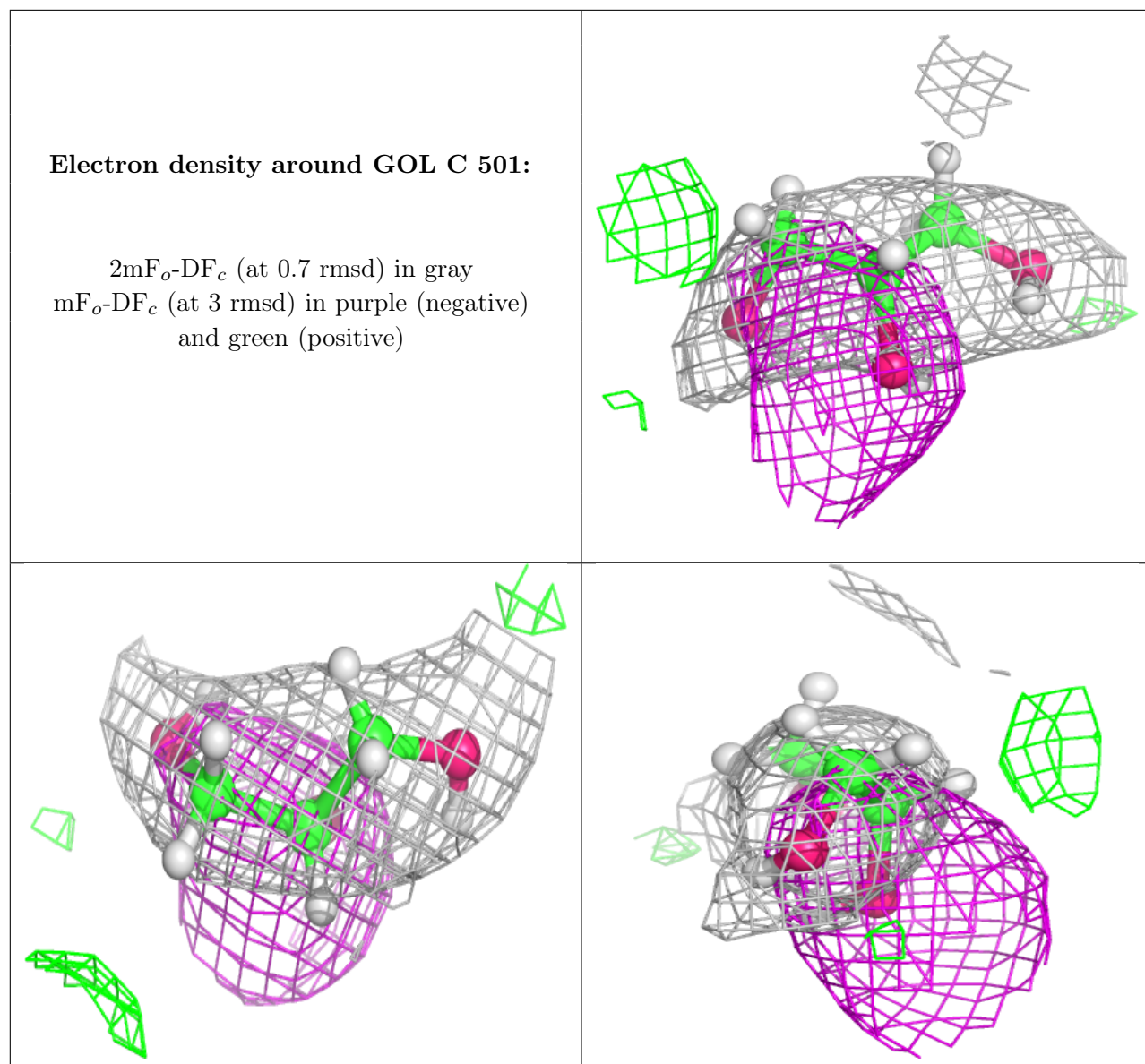
6.4 Ligands [i](#)

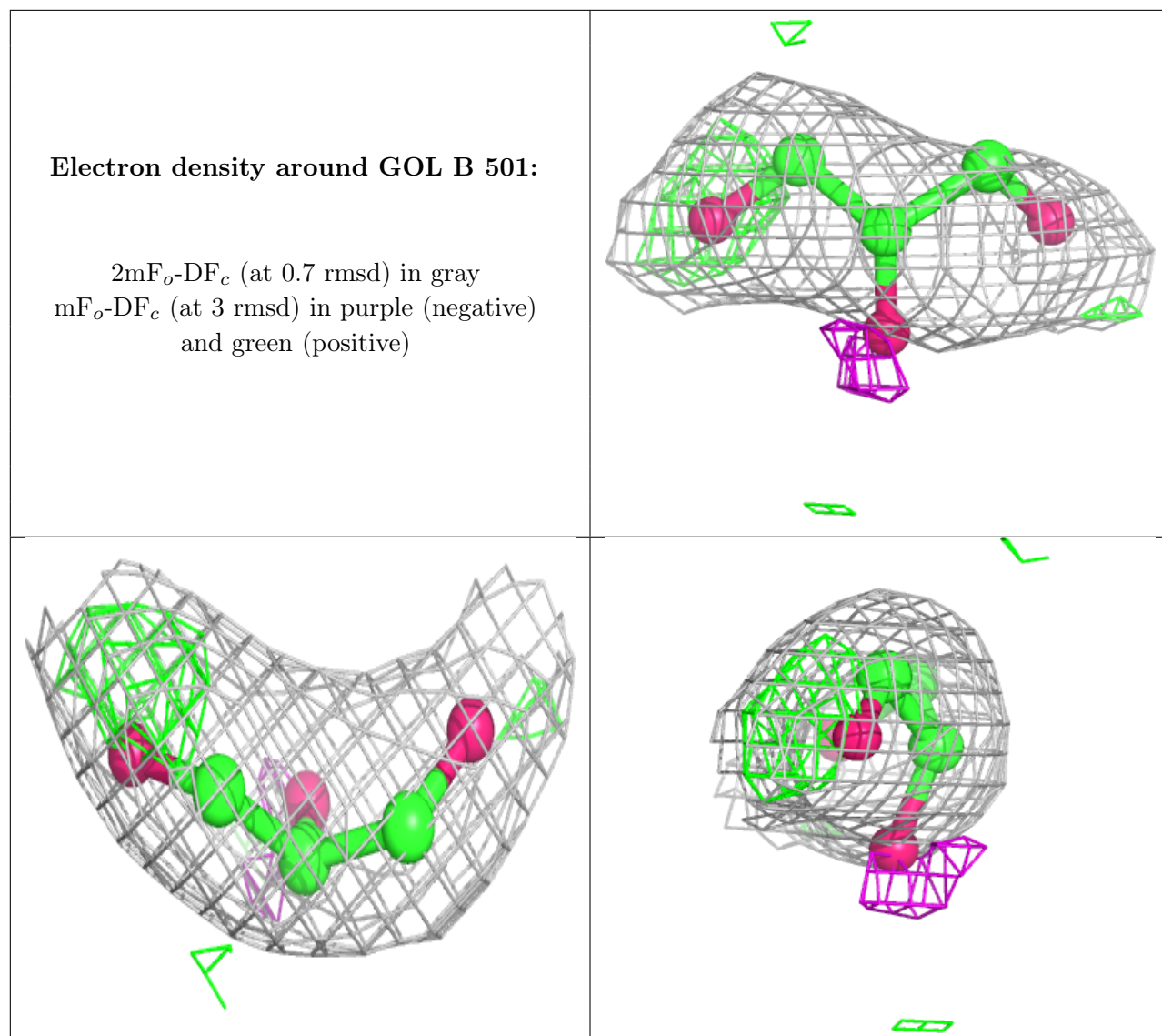
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

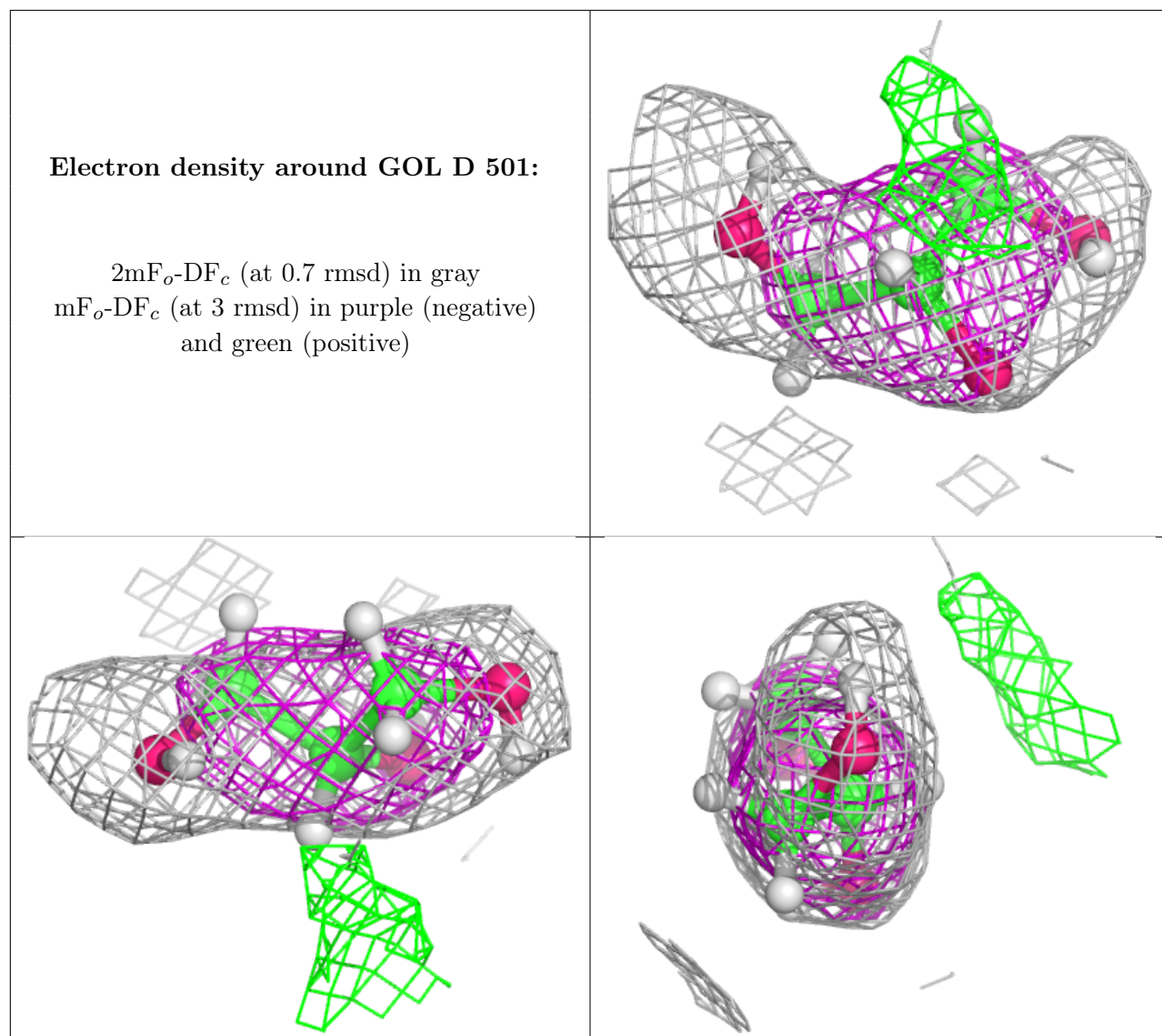
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
2	GOL	A	501	6/6	0.76	0.26	52,64,75,78	0
2	GOL	C	501	6/6	0.79	0.27	54,67,78,80	0
2	GOL	B	501	6/6	0.80	0.27	63,72,97,104	0
2	GOL	D	501	6/6	0.84	0.24	43,66,79,81	0
3	MG	B	502	1/1	0.93	0.28	53,53,53,53	0

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 [\(i\)](#)

There are no such residues in this entry.