Full wwPDB X-ray Structure Validation Report ⓘ

Aug 5, 2024 – 10:27 am BST

PDB ID	:	9ENI
Title	:	L-amino acid oxidase 4 (HcLAAO4) from the fungus Hebeloma cylindrosporum in complex with L-glutamine
Authors	:	Gilzer, D.; Koopmeiners, S.; Fischer von Mollard, G.; Niemann, H.H.
Deposited on	:	2024-03-13
Resolution	:	2.10 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:

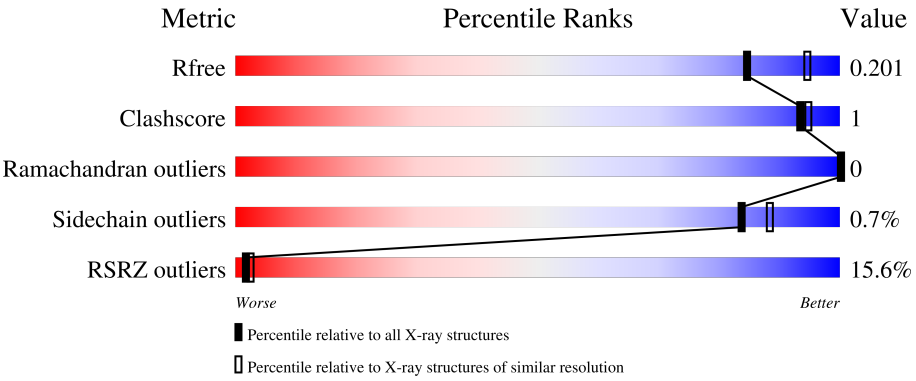
MolProbity	:	4.02b-467
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.37.1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.37.1

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 2.10 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	5197 (2.10-2.10)
Clashscore	141614	5710 (2.10-2.10)
Ramachandran outliers	138981	5647 (2.10-2.10)
Sidechain outliers	138945	5648 (2.10-2.10)
RSRZ outliers	127900	5083 (2.10-2.10)

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	562	13% 91%
1	B	562	13% 91% 6%
1	C	562	16% 91% 5%
1	D	562	17% 91% 5%

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
4	SO4	A	708	-	-	-	X
4	SO4	B	706	-	-	X	-
4	SO4	B	711	-	-	-	X
4	SO4	B	712	-	-	-	X
4	SO4	C	711	-	-	-	X
5	PGR	A	717	-	-	-	X
5	PGR	B	715	-	-	-	X
5	PGR	C	713	-	-	-	X
5	PGR	D	714	-	-	-	X

2 Entry composition (i)

There are 7 unique types of molecules in this entry. The entry contains 35305 atoms, of which 16685 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.

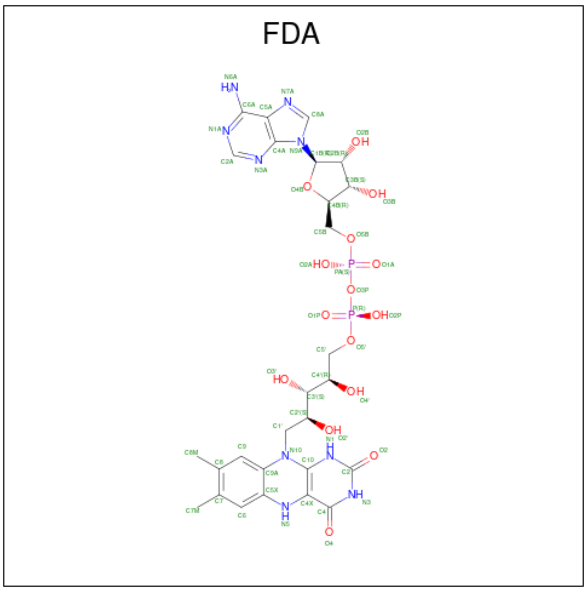
- Molecule 1 is a protein called L-amino acid oxidase 4.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	537	Total	C	H	N	O	S	0	9	0
			8407	2746	4138	716	796	11			
1	B	531	Total	C	H	N	O	S	0	5	0
			8292	2710	4082	707	782	11			
1	C	532	Total	C	H	N	O	S	0	6	0
			8304	2713	4087	708	785	11			
1	D	535	Total	C	H	N	O	S	0	8	0
			8374	2732	4126	715	790	11			

There are 8 discrepancies between the modelled and reference sequences:

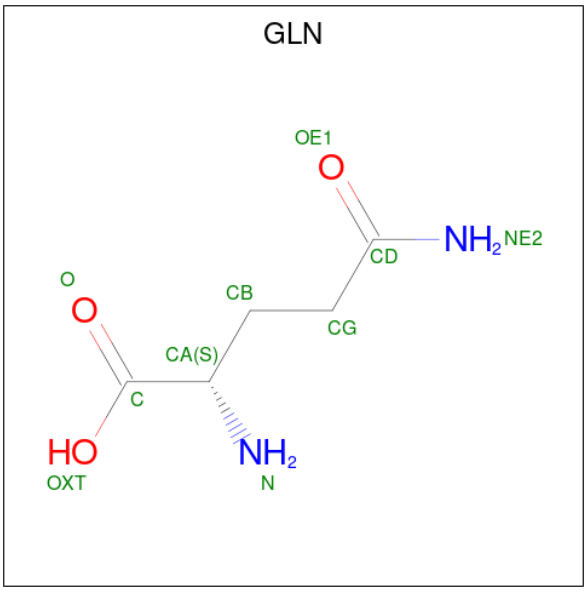
Chain	Residue	Modelled	Actual	Comment	Reference
A	474	ALA	LYS	engineered mutation	UNP S4S6Z0
A	475	ALA	LYS	engineered mutation	UNP S4S6Z0
B	474	ALA	LYS	engineered mutation	UNP S4S6Z0
B	475	ALA	LYS	engineered mutation	UNP S4S6Z0
C	474	ALA	LYS	engineered mutation	UNP S4S6Z0
C	475	ALA	LYS	engineered mutation	UNP S4S6Z0
D	474	ALA	LYS	engineered mutation	UNP S4S6Z0
D	475	ALA	LYS	engineered mutation	UNP S4S6Z0

- Molecule 2 is DIHYDROFLAVINE-ADENINE DINUCLEOTIDE (three-letter code: FDA) (formula: $C_{27}H_{35}N_9O_{15}P_2$) (labeled as "Ligand of Interest" by depositor).



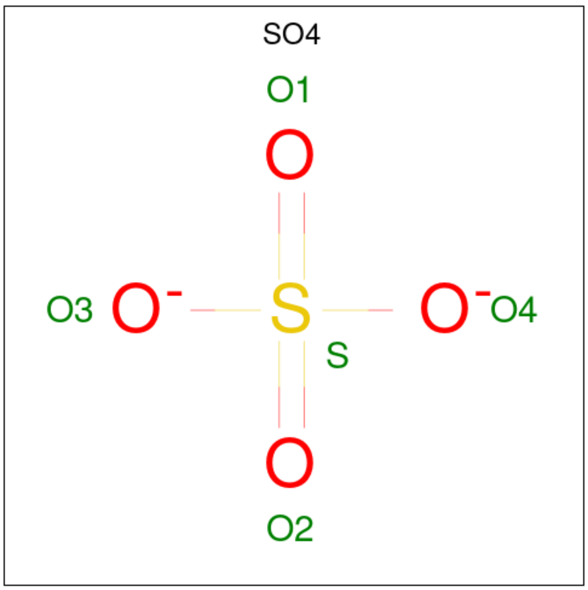
Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
2	A	1	Total	C	H	N	O	P	0	0
			85	27	32	9	15	2		
2	B	1	Total	C	H	N	O	P	0	0
			85	27	32	9	15	2		
2	C	1	Total	C	H	N	O	P	0	0
			85	27	32	9	15	2		
2	D	1	Total	C	H	N	O	P	0	0
			85	27	32	9	15	2		

- Molecule 3 is GLUTAMINE (three-letter code: GLN) (formula: $C_5H_{10}N_2O_3$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total C H N O 17 5 7 2 3	0	0
3	B	1	Total C H N O 17 5 7 2 3	0	0
3	C	1	Total C H N O 17 5 7 2 3	0	0
3	D	1	Total C H N O 17 5 7 2 3	0	0

- Molecule 4 is SULFATE ION (three-letter code: SO4) (formula: O_4S).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total O S 5 4 1	0	0
4	A	1	Total O S 5 4 1	0	0
4	A	1	Total O S 5 4 1	0	0
4	A	1	Total O S 5 4 1	0	0
4	A	1	Total O S 5 4 1	0	0
4	A	1	Total O S 5 4 1	0	0
4	A	1	Total O S 5 4 1	0	0
4	A	1	Total O S 5 4 1	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total O S 5 4 1	0	0
4	A	1	Total O S 5 4 1	0	0
4	A	1	Total O S 5 4 1	0	0
4	A	1	Total O S 5 4 1	0	0
4	A	1	Total O S 5 4 1	0	0
4	B	1	Total O S 5 4 1	0	0
4	B	1	Total O S 5 4 1	0	0
4	B	1	Total O S 5 4 1	0	0
4	B	1	Total O S 5 4 1	0	0
4	B	1	Total O S 5 4 1	0	0
4	B	1	Total O S 5 4 1	0	0
4	B	1	Total O S 5 4 1	0	0
4	B	1	Total O S 5 4 1	0	0
4	B	1	Total O S 5 4 1	0	0
4	B	1	Total O S 5 4 1	0	0
4	B	1	Total O S 5 4 1	0	0
4	C	1	Total O S 5 4 1	0	0
4	C	1	Total O S 5 4 1	0	0
4	C	1	Total O S 5 4 1	0	0
4	C	1	Total O S 5 4 1	0	0
4	C	1	Total O S 5 4 1	0	0

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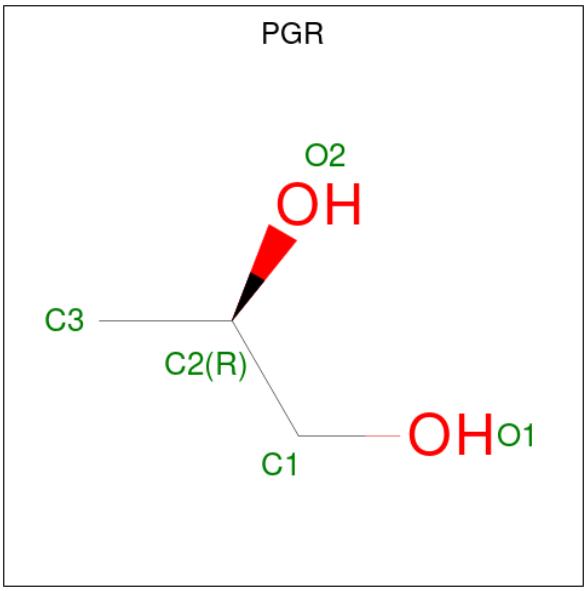
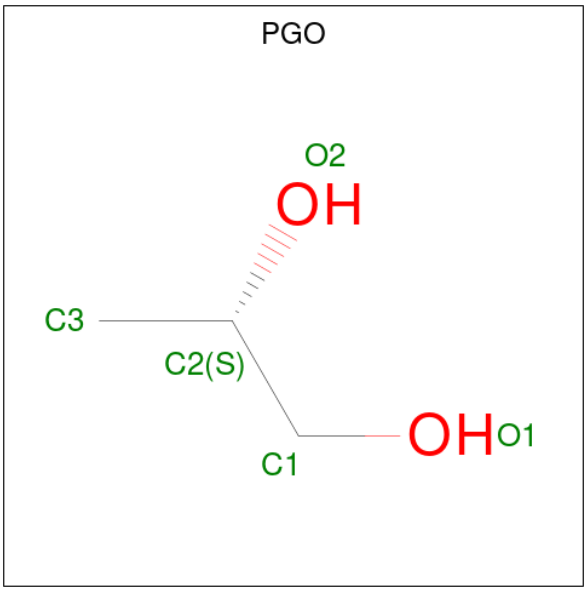
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	C	1	Total O S 5 4 1	0	0
4	C	1	Total O S 5 4 1	0	0
4	C	1	Total O S 5 4 1	0	0
4	C	1	Total O S 5 4 1	0	0
4	C	1	Total O S 5 4 1	0	0
4	D	1	Total O S 5 4 1	0	0
4	D	1	Total O S 5 4 1	0	0
4	D	1	Total O S 5 4 1	0	0
4	D	1	Total O S 5 4 1	0	0
4	D	1	Total O S 5 4 1	0	0
4	D	1	Total O S 5 4 1	0	0
4	D	1	Total O S 5 4 1	0	0
4	D	1	Total O S 5 4 1	0	0
4	D	1	Total O S 5 4 1	0	0
4	D	1	Total O S 5 4 1	0	0
4	D	1	Total O S 5 4 1	0	0

- Molecule 5 is R-1,2-PROPANEDIOL (three-letter code: PGR) (formula: $C_3H_8O_2$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
5	A	1	Total	C	H	O	0	0
			13	3	8	2		
5	A	1	Total	C	H	O	0	0
			13	3	8	2		
5	A	1	Total	C	H	O	0	0
			13	3	8	2		
5	A	1	Total	C	H	O	0	0
			13	3	8	2		
5	B	1	Total	C	H	O	0	0
			13	3	8	2		
5	B	1	Total	C	H	O	0	0
			13	3	8	2		
5	C	1	Total	C	H	O	0	0
			13	3	8	2		
5	C	1	Total	C	H	O	0	0
			13	3	8	2		
5	C	1	Total	C	H	O	0	0
			13	3	8	2		
5	D	1	Total	C	H	O	0	0
			13	3	8	2		

- Molecule 6 is S-1,2-PROPANEDIOL (three-letter code: PGO) (formula: $C_3H_8O_2$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
6	A	1	Total	C	H	O	0	0
			13	3	8	2		
6	B	1	Total	C	H	O	0	0
			13	3	8	2		

- Molecule 7 is water.

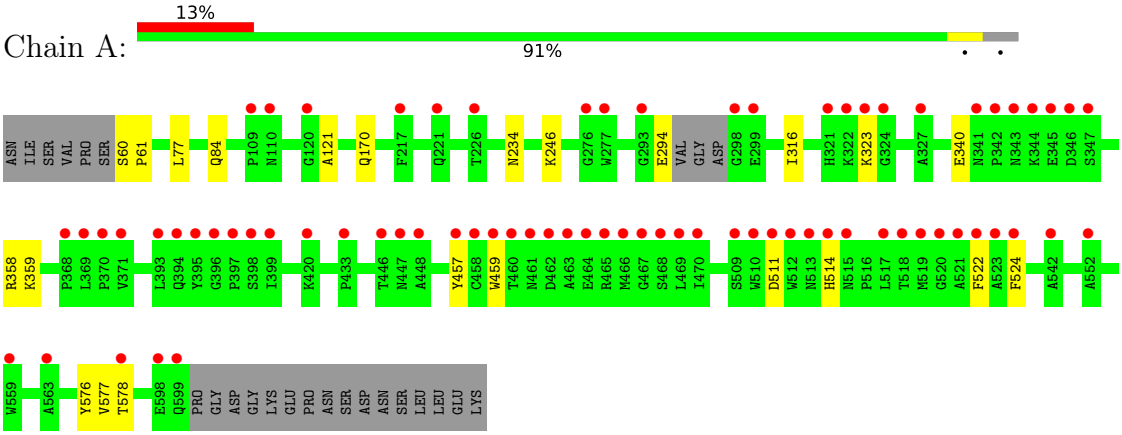
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	A	353	Total	O	0	3
			356	356		
7	B	307	Total	O	0	2
			309	309		
7	C	232	Total	O	0	2
			234	234		
7	D	237	Total	O	0	3
			240	240		

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.

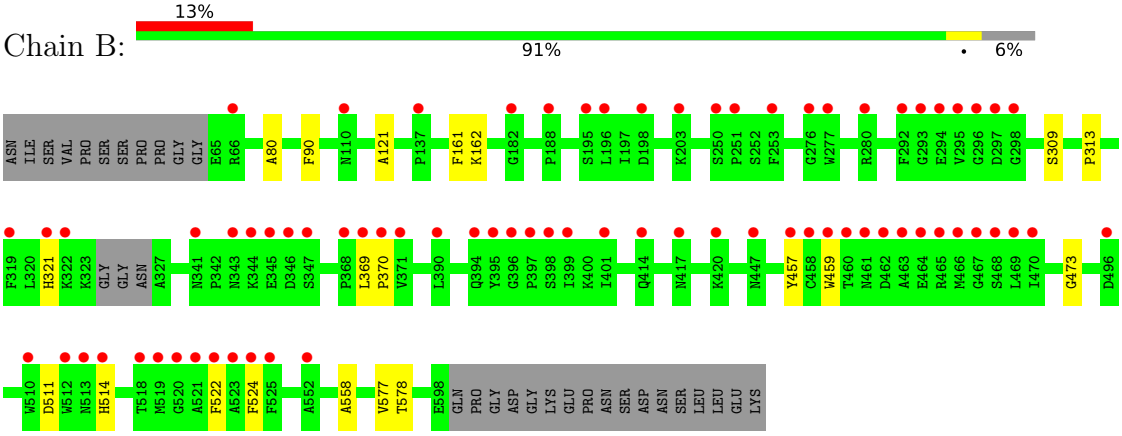
• Molecule 1: L-amino acid oxidase 4

Chain A:



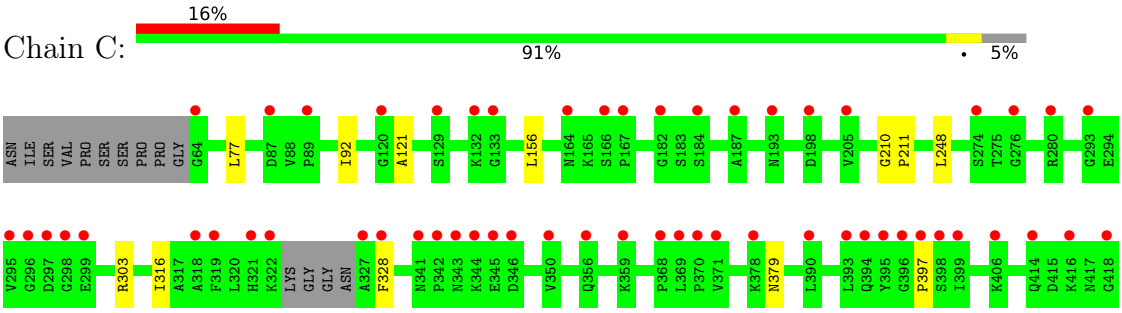
• Molecule 1: L-amino acid oxidase 4

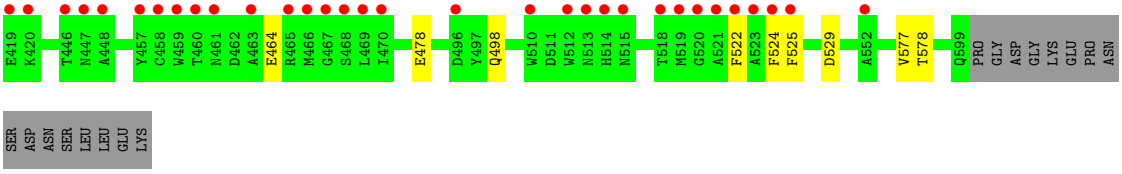
Chain B:



• Molecule 1: L-amino acid oxidase 4

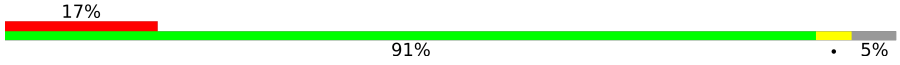
Chain C:

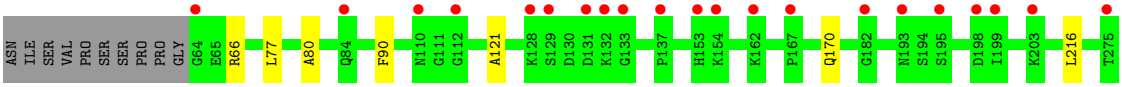


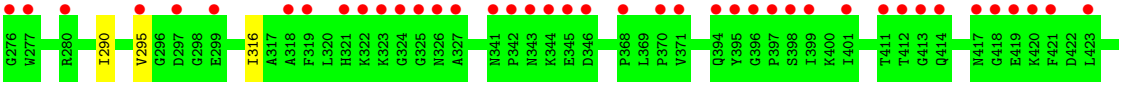


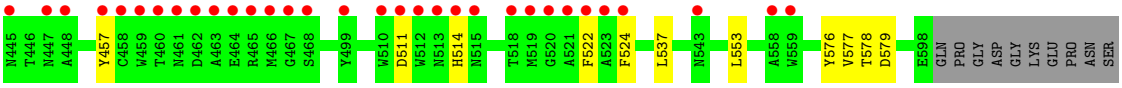
• Molecule 1: L-amino acid oxidase 4

Chain D:









4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	84.71Å 131.74Å 107.25Å 90.00° 95.95° 90.00°	Depositor
Resolution (Å)	42.13 – 2.10 45.54 – 2.10	Depositor EDS
% Data completeness (in resolution range)	93.3 (42.13-2.10) 93.3 (45.54-2.10)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.69 (at 2.10Å)	Xtriage
Refinement program	PHENIX 1.21_5207	Depositor
R, R_{free}	0.172 , 0.203 0.169 , 0.201	Depositor DCC
R_{free} test set	6356 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å^2)	40.4	Xtriage
Anisotropy	0.186	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.40 , 42.0	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	35305	wwPDB-VP
Average B, all atoms (Å^2)	49.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.54% 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: PGO, SO4, FDA, PGR

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	0.27	0/4418	0.50	0/6006
1	B	0.27	0/4347	0.49	0/5910
1	C	0.26	0/4357	0.49	0/5925
1	D	0.27	0/4393	0.49	0/5973
All	All	0.27	0/17515	0.49	0/23814

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	4269	4138	4139	12	1
1	B	4210	4082	4074	13	0
1	C	4217	4087	4080	12	0
1	D	4248	4126	4124	11	2
2	A	53	32	33	1	0
2	B	53	32	33	1	0
2	C	53	32	33	1	0
2	D	53	32	33	1	0
3	A	10	7	7	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	B	10	7	7	1	0
3	C	10	7	7	0	0
3	D	10	7	7	1	0
4	A	65	0	0	2	0
4	B	55	0	0	2	0
4	C	50	0	0	2	1
4	D	55	0	0	1	0
5	A	20	32	32	2	0
5	B	10	16	16	2	0
5	C	15	24	24	0	0
5	D	5	8	8	1	0
6	A	5	8	8	0	0
6	B	5	8	8	0	0
7	A	356	0	0	1	0
7	B	309	0	0	1	0
7	C	234	0	0	1	0
7	D	240	0	0	1	0
All	All	18620	16685	16673	48	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 1.

All (48) 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:B:161:PHE:N	4:B:706:SO4:O4	2.18	0.77
1:A:358:ARG:NH2	4:A:710:SO4:O1	2.22	0.72
1:D:457:TYR:O	5:D:714:PGR:H32	1.98	0.64
1:B:473:GLY:HA3	1:C:248:LEU:HD12	1.80	0.64
1:C:92:ILE:HD12	1:C:328:PHE:CE1	2.33	0.63
1:C:379:ASN:N	4:C:704:SO4:O4	2.31	0.62
1:A:234:ASN:OD1	1:A:246:LYS:NZ	2.32	0.59
1:A:577:VAL:HG23	1:A:578:THR:HG23	1.85	0.59
1:A:294:GLU:OE2	7:A:801:HOH:O	2.17	0.59
1:C:156:LEU:O	1:C:303:ARG:NH2	2.36	0.56
1:D:511:ASP:OD2	1:D:514[B]:HIS:ND1	2.39	0.56
1:A:459:TRP:CZ3	5:A:717:PGR:H2	2.42	0.55
1:D:170:GLN:NE2	4:D:709:SO4:O3	2.40	0.54
1:C:478:GLU:OE1	7:C:801:HOH:O	2.18	0.54
1:C:577:VAL:HG23	1:C:578:THR:HG23	1.91	0.52
1:A:121:ALA:HA	2:A:701:FDA:C4X	2.41	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:121:ALA:HA	2:C:701:FDA:C4X	2.42	0.50
1:D:121:ALA:HA	2:D:701:FDA:C4X	2.40	0.50
1:B:577:VAL:HG23	1:B:578:THR:HG23	1.93	0.50
1:A:457:TYR:O	5:A:717:PGR:H32	2.12	0.49
3:D:702:GLN:OE1	3:D:702:GLN:N	2.46	0.49
1:B:511:ASP:OD2	1:B:514[B]:HIS:ND1	2.47	0.48
1:D:577:VAL:HG23	1:D:578:THR:HG23	1.96	0.48
1:B:162:LYS:N	4:B:706:SO4:O4	2.43	0.47
1:A:170:GLN:NE2	4:A:703:SO4:O4	2.48	0.47
1:B:121:ALA:HA	2:B:701:FDA:C4X	2.45	0.47
1:D:77:LEU:HB3	1:D:316:ILE:HG21	1.97	0.47
1:C:77:LEU:HB3	1:C:316:ILE:HG21	1.96	0.46
1:A:511:ASP:OD2	1:A:514[A]:HIS:ND1	2.49	0.46
1:A:340:GLU:OE2	1:A:359:LYS:NZ	2.49	0.45
1:D:537:LEU:CB	1:D:553:LEU:HD11	2.46	0.45
1:C:498:GLN:N	4:C:711:SO4:O3	2.49	0.44
1:A:77:LEU:HB3	1:A:316:ILE:HG21	1.99	0.44
1:D:579:ASP:OD1	7:D:801:HOH:O	2.21	0.44
1:B:459:TRP:CZ3	5:B:715:PGR:H2	2.53	0.43
1:B:457:TYR:O	5:B:715:PGR:H32	2.18	0.42
1:B:309:SER:O	1:B:313:PRO:HD2	2.20	0.42
1:D:216:LEU:HB2	1:D:290:ILE:HD11	2.02	0.42
1:B:80:ALA:HB1	1:B:90:PHE:CE1	2.53	0.42
1:B:321:HIS:ND1	7:B:807:HOH:O	2.37	0.42
1:C:525:PHE:HB3	1:C:529:ASP:HB2	2.02	0.42
1:A:60:SER:N	1:A:61:PRO:HD2	2.36	0.41
1:C:210:GLY:N	1:C:211:PRO:HD2	2.36	0.41
1:C:397:PRO:HG3	1:C:464:GLU:HG3	2.03	0.41
1:D:537:LEU:HB2	1:D:553:LEU:HD11	2.02	0.41
1:B:558:ALA:HB1	3:B:702:GLN:HG3	2.02	0.41
1:D:80:ALA:HB1	1:D:90:PHE:CE2	2.56	0.40
1:B:369:LEU:N	1:B:370:PRO:HD2	2.36	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)
1:D:66:ARG:NH1	4:C:705:SO4:O1[2_647]	2.07	0.13
1:A:576:TYR:O	1:D:576:TYR:OH[2_656]	2.10	0.10

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	542/562 (96%)	526 (97%)	16 (3%)	0	100	100
1	B	532/562 (95%)	517 (97%)	15 (3%)	0	100	100
1	C	534/562 (95%)	519 (97%)	15 (3%)	0	100	100
1	D	541/562 (96%)	524 (97%)	17 (3%)	0	100	100
All	All	2149/2248 (96%)	2086 (97%)	63 (3%)	0	100	100

There are no Ramachandran outliers to report.

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	454/467 (97%)	449 (99%)	5 (1%)	73	79
1	B	447/467 (96%)	445 (100%)	2 (0%)	91	94
1	C	448/467 (96%)	446 (100%)	2 (0%)	91	94
1	D	451/467 (97%)	448 (99%)	3 (1%)	84	88
All	All	1800/1868 (96%)	1788 (99%)	12 (1%)	84	88

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

Mol	Chain	Res	Type
1	A	84[A]	GLN
1	A	84[B]	GLN

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Mol	Chain	Res	Type
1	A	323	LYS
1	A	522	PHE
1	A	524	PHE
1	B	522	PHE
1	B	524	PHE
1	C	522	PHE
1	C	524	PHE
1	D	295	VAL
1	D	522	PHE
1	D	524	PHE

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

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)

65 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
4	SO4	D	710	-	4,4,4	0.61	0	6,6,6	0.06	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
4	SO4	A	713	-	4,4,4	0.59	0	6,6,6	0.05	0
5	PGR	A	716	-	3,4,4	0.25	0	1,4,4	0.52	0
2	FDA	D	701	-	52,58,58	0.62	0	60,89,89	0.75	2 (3%)
4	SO4	C	705	-	4,4,4	0.58	0	6,6,6	0.08	0
4	SO4	B	709	-	4,4,4	0.61	0	6,6,6	0.05	0
5	PGR	A	719	-	3,4,4	0.27	0	1,4,4	0.35	0
5	PGR	A	720	-	3,4,4	0.26	0	1,4,4	0.52	0
5	PGR	C	713	-	3,4,4	0.27	0	1,4,4	0.60	0
4	SO4	C	703	-	4,4,4	0.60	0	6,6,6	0.07	0
5	PGR	D	714	-	3,4,4	0.24	0	1,4,4	0.76	0
4	SO4	D	708	-	4,4,4	0.60	0	6,6,6	0.05	0
2	FDA	A	701	-	52,58,58	0.62	0	60,89,89	0.75	2 (3%)
4	SO4	B	713	-	4,4,4	0.62	0	6,6,6	0.07	0
4	SO4	A	706	-	4,4,4	0.60	0	6,6,6	0.12	0
4	SO4	C	709	-	4,4,4	0.61	0	6,6,6	0.06	0
4	SO4	D	707	-	4,4,4	0.61	0	6,6,6	0.06	0
4	SO4	B	712	-	4,4,4	0.61	0	6,6,6	0.09	0
5	PGR	C	715	-	3,4,4	0.29	0	1,4,4	0.37	0
4	SO4	A	709	-	4,4,4	0.61	0	6,6,6	0.04	0
4	SO4	C	706	-	4,4,4	0.61	0	6,6,6	0.07	0
4	SO4	A	707	-	4,4,4	0.59	0	6,6,6	0.07	0
4	SO4	D	713	-	4,4,4	0.60	0	6,6,6	0.06	0
4	SO4	A	705	-	4,4,4	0.58	0	6,6,6	0.12	0
3	GLN	D	702	-	8,9,9	0.81	1 (12%)	10,11,11	1.10	2 (20%)
4	SO4	A	708	-	4,4,4	0.60	0	6,6,6	0.05	0
4	SO4	D	706	-	4,4,4	0.60	0	6,6,6	0.08	0
4	SO4	D	703	-	4,4,4	0.60	0	6,6,6	0.08	0
5	PGR	A	717	-	3,4,4	0.28	0	1,4,4	0.67	0
3	GLN	C	702	-	8,9,9	0.87	1 (12%)	10,11,11	1.06	1 (10%)
4	SO4	B	705	-	4,4,4	0.60	0	6,6,6	0.10	0
3	GLN	A	702	-	8,9,9	0.90	1 (12%)	10,11,11	1.20	2 (20%)
4	SO4	B	710	-	4,4,4	0.60	0	6,6,6	0.07	0
4	SO4	B	707	-	4,4,4	0.60	0	6,6,6	0.06	0
4	SO4	C	704	-	4,4,4	0.60	0	6,6,6	0.06	0
4	SO4	A	704	-	4,4,4	0.57	0	6,6,6	0.15	0
4	SO4	D	704	-	4,4,4	0.60	0	6,6,6	0.09	0
5	PGR	B	716	-	3,4,4	0.25	0	1,4,4	0.58	0
4	SO4	A	714	-	4,4,4	0.61	0	6,6,6	0.06	0
4	SO4	B	708	-	4,4,4	0.61	0	6,6,6	0.06	0
4	SO4	B	706	-	4,4,4	0.60	0	6,6,6	0.07	0
3	GLN	B	702	-	8,9,9	0.93	1 (12%)	10,11,11	0.93	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
2	FDA	C	701	-	52,58,58	0.62	0	60,89,89	0.74	2 (3%)
4	SO4	A	703	-	4,4,4	0.60	0	6,6,6	0.08	0
4	SO4	A	712	-	4,4,4	0.60	0	6,6,6	0.06	0
4	SO4	C	712	-	4,4,4	0.62	0	6,6,6	0.07	0
5	PGR	B	715	-	3,4,4	0.27	0	1,4,4	0.72	0
4	SO4	A	710	-	4,4,4	0.60	0	6,6,6	0.07	0
4	SO4	B	711	-	4,4,4	0.62	0	6,6,6	0.11	0
4	SO4	C	710	-	4,4,4	0.60	0	6,6,6	0.06	0
4	SO4	D	709	-	4,4,4	0.59	0	6,6,6	0.11	0
6	PGO	B	714	-	3,4,4	0.25	0	1,4,4	0.55	0
4	SO4	A	715	-	4,4,4	0.62	0	6,6,6	0.04	0
4	SO4	C	707	-	4,4,4	0.61	0	6,6,6	0.05	0
4	SO4	B	703	-	4,4,4	0.62	0	6,6,6	0.17	0
2	FDA	B	701	-	52,58,58	0.61	0	60,89,89	0.74	1 (1%)
4	SO4	D	711	-	4,4,4	0.60	0	6,6,6	0.05	0
4	SO4	D	712	-	4,4,4	0.61	0	6,6,6	0.10	0
4	SO4	C	708	-	4,4,4	0.61	0	6,6,6	0.05	0
6	PGO	A	718	-	3,4,4	0.27	0	1,4,4	0.54	0
4	SO4	D	705	-	4,4,4	0.61	0	6,6,6	0.08	0
4	SO4	A	711	-	4,4,4	0.61	0	6,6,6	0.07	0
4	SO4	C	711	-	4,4,4	0.60	0	6,6,6	0.04	0
5	PGR	C	714	-	3,4,4	0.28	0	1,4,4	0.65	0
4	SO4	B	704	-	4,4,4	0.60	0	6,6,6	0.06	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
5	PGR	A	716	-	-	1/2/2/2	-
2	FDA	D	701	-	-	2/30/50/50	0/6/6/6
5	PGR	A	719	-	-	0/2/2/2	-
5	PGR	C	713	-	-	2/2/2/2	-
5	PGR	A	720	-	-	2/2/2/2	-
5	PGR	D	714	-	-	0/2/2/2	-
2	FDA	A	701	-	-	2/30/50/50	0/6/6/6
5	PGR	C	715	-	-	2/2/2/2	-
3	GLN	D	702	-	-	2/9/9/9	-
5	PGR	A	717	-	-	2/2/2/2	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	GLN	C	702	-	-	3/9/9/9	-
3	GLN	A	702	-	-	1/9/9/9	-
5	PGR	B	716	-	-	2/2/2/2	-
3	GLN	B	702	-	-	1/9/9/9	-
2	FDA	C	701	-	-	2/30/50/50	0/6/6/6
5	PGR	B	715	-	-	2/2/2/2	-
6	PGO	B	714	-	-	2/2/2/2	-
2	FDA	B	701	-	-	2/30/50/50	0/6/6/6
6	PGO	A	718	-	-	0/2/2/2	-
5	PGR	C	714	-	-	2/2/2/2	-

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	702	GLN	OXT-C	-2.29	1.23	1.30
3	C	702	GLN	OXT-C	-2.24	1.23	1.30
3	B	702	GLN	OXT-C	-2.19	1.23	1.30
3	D	702	GLN	OXT-C	-2.14	1.23	1.30

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	A	702	GLN	OXT-C-O	-2.72	117.92	124.09
3	D	702	GLN	OXT-C-O	-2.59	118.20	124.09
2	A	701	FDA	C5A-C6A-N6A	2.37	123.95	120.35
2	C	701	FDA	C5A-C6A-N6A	2.27	123.80	120.35
2	B	701	FDA	C5A-C6A-N6A	2.26	123.78	120.35
2	D	701	FDA	C5A-C6A-N6A	2.25	123.76	120.35
3	D	702	GLN	OXT-C-CA	2.22	120.94	113.38
3	C	702	GLN	OXT-C-O	-2.21	119.07	124.09
3	A	702	GLN	OXT-C-CA	2.18	120.81	113.38
2	A	701	FDA	O4B-C1B-C2B	-2.11	103.84	106.93
2	C	701	FDA	O4B-C1B-C2B	-2.10	103.86	106.93
2	D	701	FDA	O4B-C1B-C2B	-2.07	103.89	106.93

There are no chirality outliers.

All (32) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	A	717	PGR	O1-C1-C2-C3

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Mol	Chain	Res	Type	Atoms
5	A	717	PGR	O1-C1-C2-O2
5	A	720	PGR	O1-C1-C2-O2
5	B	715	PGR	O1-C1-C2-C3
5	B	715	PGR	O1-C1-C2-O2
5	B	716	PGR	O1-C1-C2-C3
5	B	716	PGR	O1-C1-C2-O2
5	C	713	PGR	O1-C1-C2-C3
5	C	713	PGR	O1-C1-C2-O2
5	C	715	PGR	O1-C1-C2-C3
5	C	715	PGR	O1-C1-C2-O2
6	B	714	PGO	O1-C1-C2-C3
6	B	714	PGO	O1-C1-C2-O2
2	A	701	FDA	PA-O3P-P-O5'
2	B	701	FDA	PA-O3P-P-O5'
2	C	701	FDA	PA-O3P-P-O5'
2	D	701	FDA	PA-O3P-P-O5'
5	A	716	PGR	O1-C1-C2-C3
5	A	720	PGR	O1-C1-C2-C3
5	C	714	PGR	O1-C1-C2-C3
3	A	702	GLN	CA-CB-CG-CD
3	C	702	GLN	CA-CB-CG-CD
3	B	702	GLN	CA-CB-CG-CD
3	D	702	GLN	OXT-C-CA-CB
2	D	701	FDA	O4B-C4B-C5B-O5B
3	C	702	GLN	NE2-CD-CG-CB
2	A	701	FDA	O4B-C4B-C5B-O5B
2	B	701	FDA	O4B-C4B-C5B-O5B
2	C	701	FDA	O4B-C4B-C5B-O5B
3	D	702	GLN	O-C-CA-CB
3	C	702	GLN	OE1-CD-CG-CB
5	C	714	PGR	O1-C1-C2-O2

There are no ring outliers.

16 monomers are involved in 19 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	D	701	FDA	1	0
4	C	705	SO4	0	1
5	D	714	PGR	1	0
2	A	701	FDA	1	0
3	D	702	GLN	1	0
5	A	717	PGR	2	0

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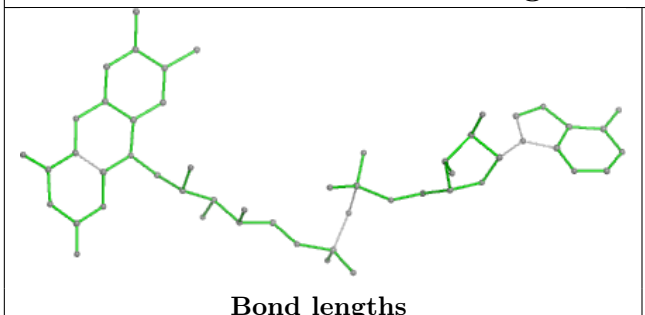
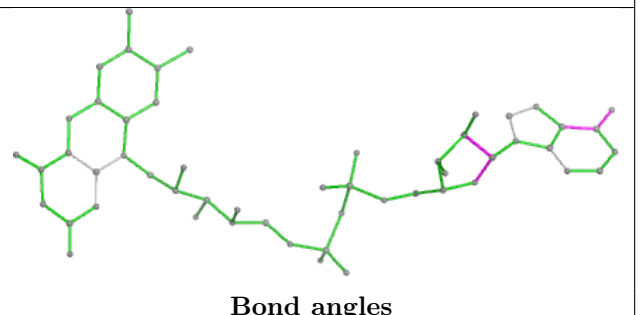
Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	C	704	SO4	1	0
4	B	706	SO4	2	0
3	B	702	GLN	1	0
2	C	701	FDA	1	0
4	A	703	SO4	1	0
5	B	715	PGR	2	0
4	A	710	SO4	1	0
4	D	709	SO4	1	0
2	B	701	FDA	1	0
4	C	711	SO4	1	0

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 then 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.

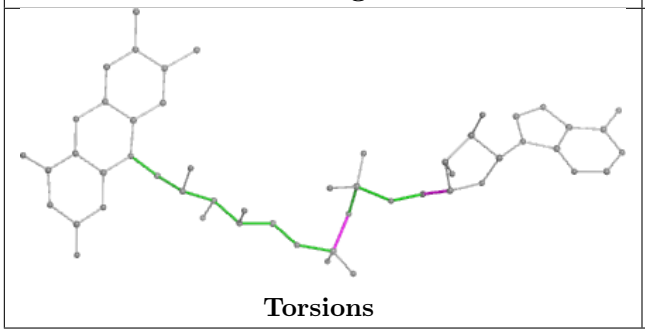
Ligand FDA D 701



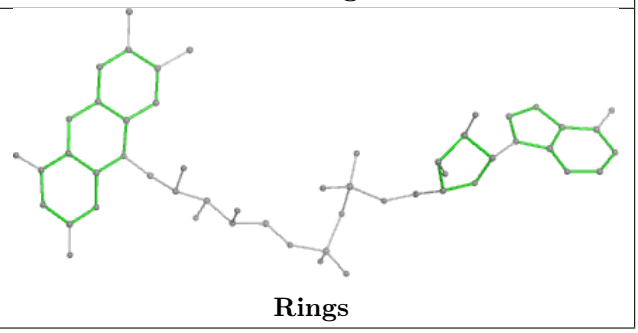
Bond lengths



Bond angles

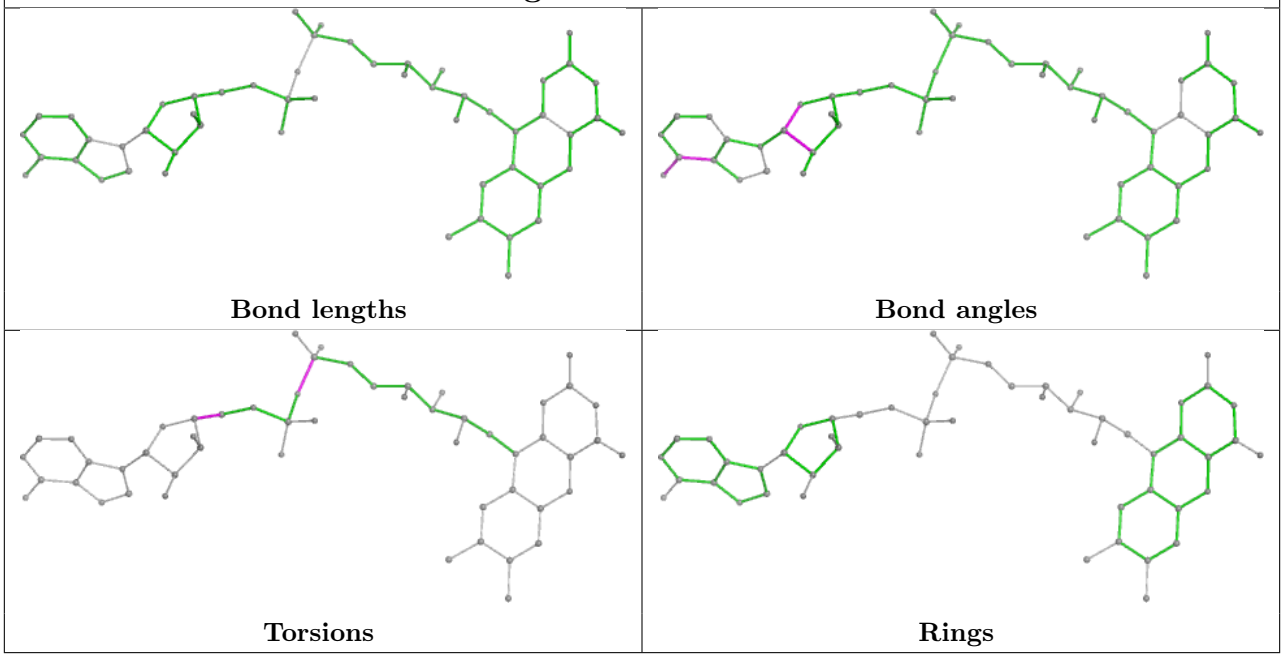


Torsions

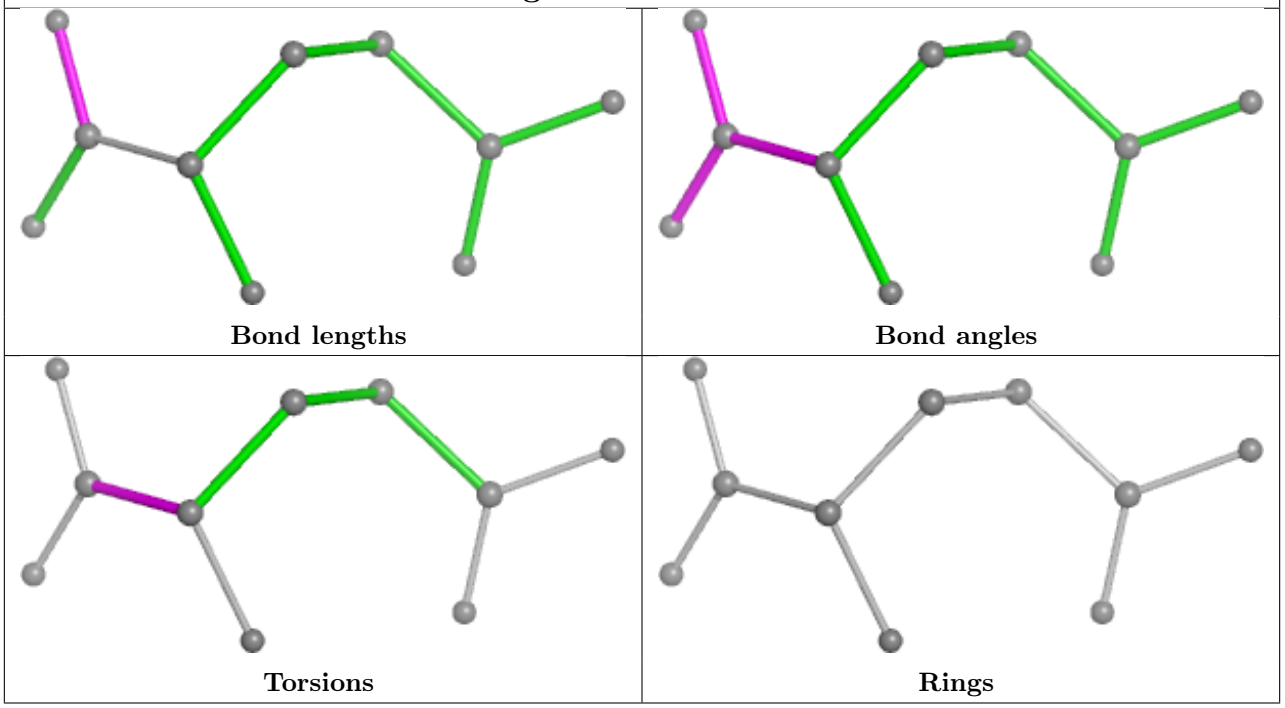


Rings

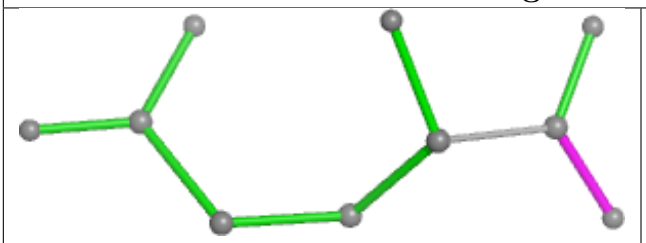
Ligand FDA A 701



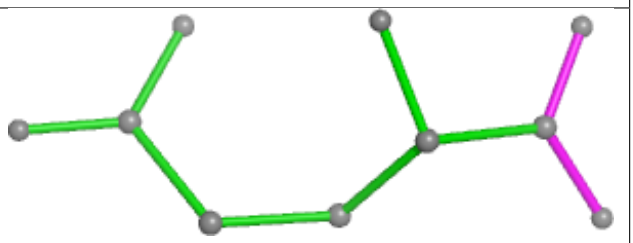
Ligand GLN D 702



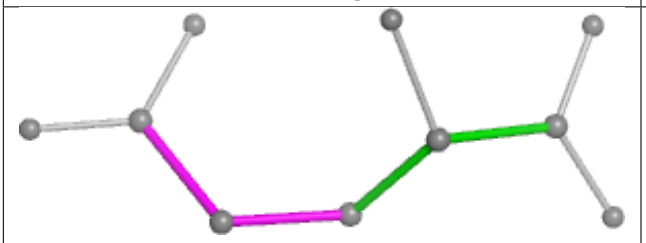
Ligand GLN C 702



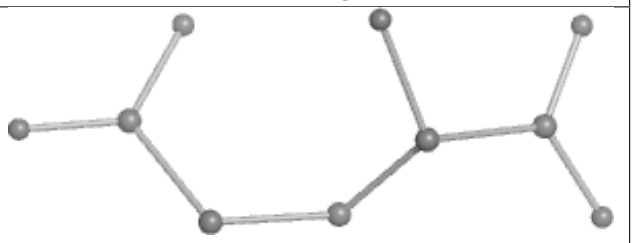
Bond lengths



Bond angles

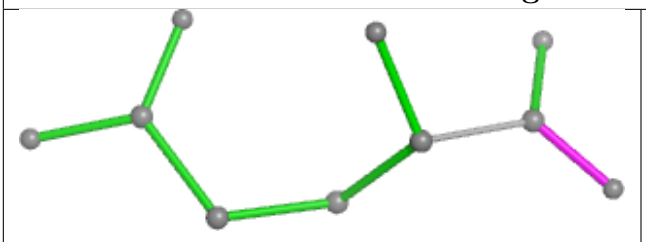


Torsions

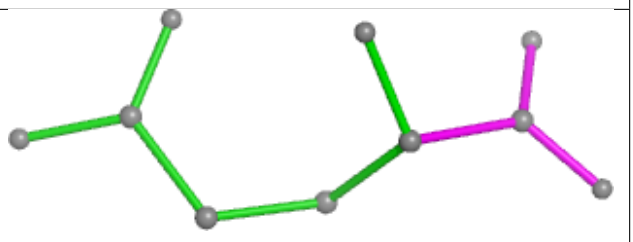


Rings

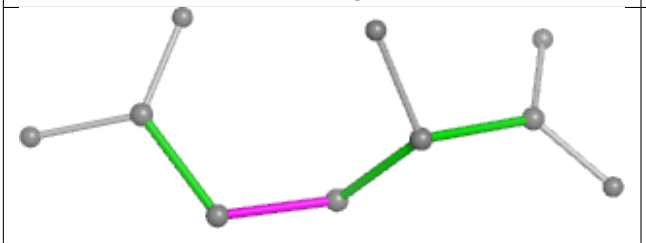
Ligand GLN A 702



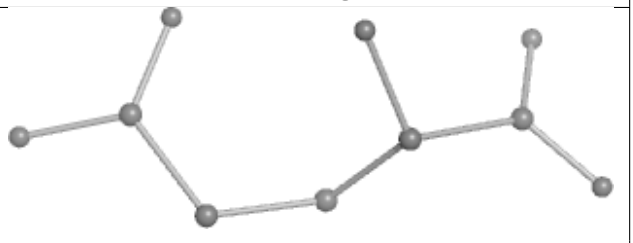
Bond lengths



Bond angles

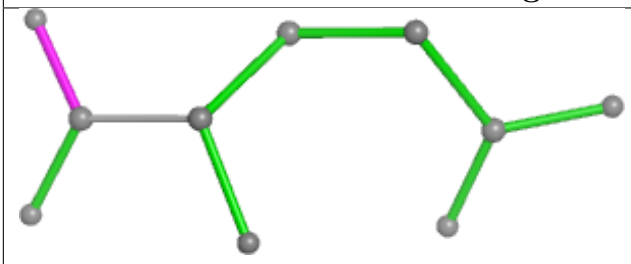


Torsions

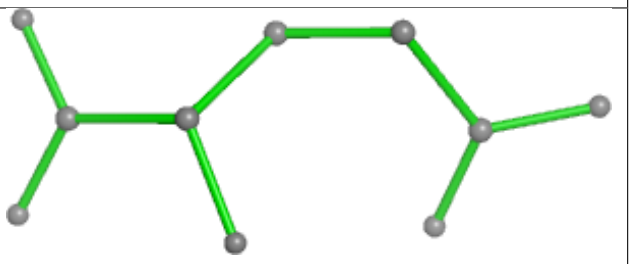


Rings

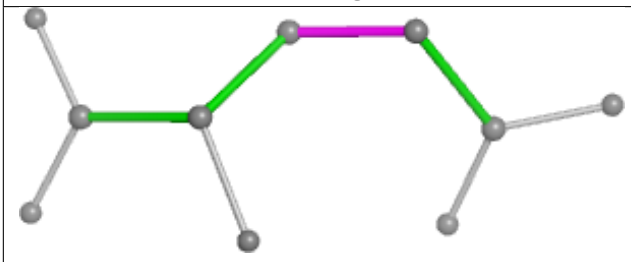
Ligand GLN B 702



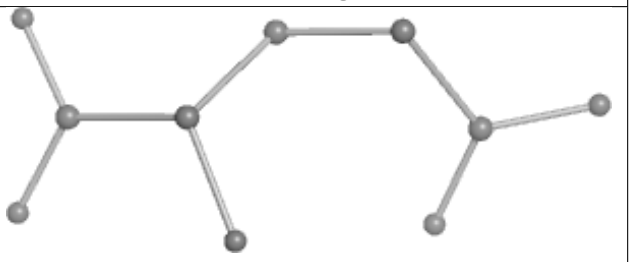
Bond lengths



Bond angles

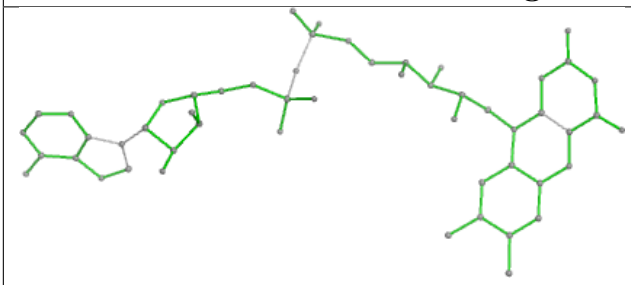


Torsions

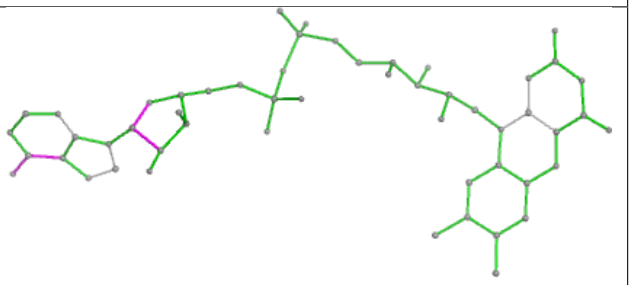


Rings

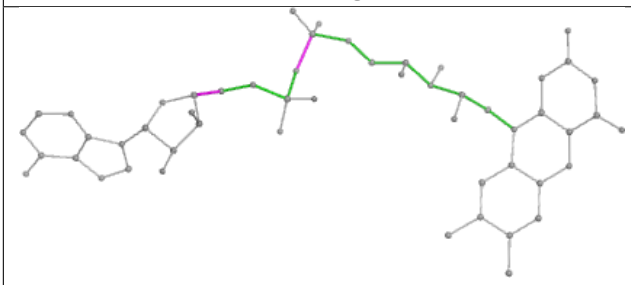
Ligand FDA C 701



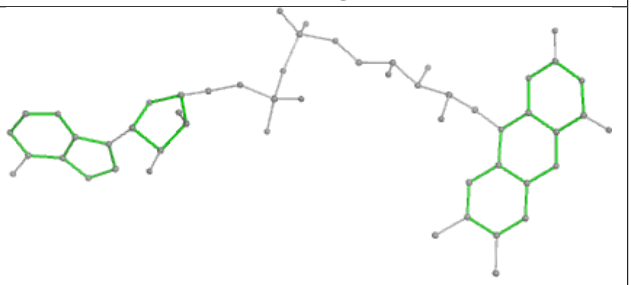
Bond lengths



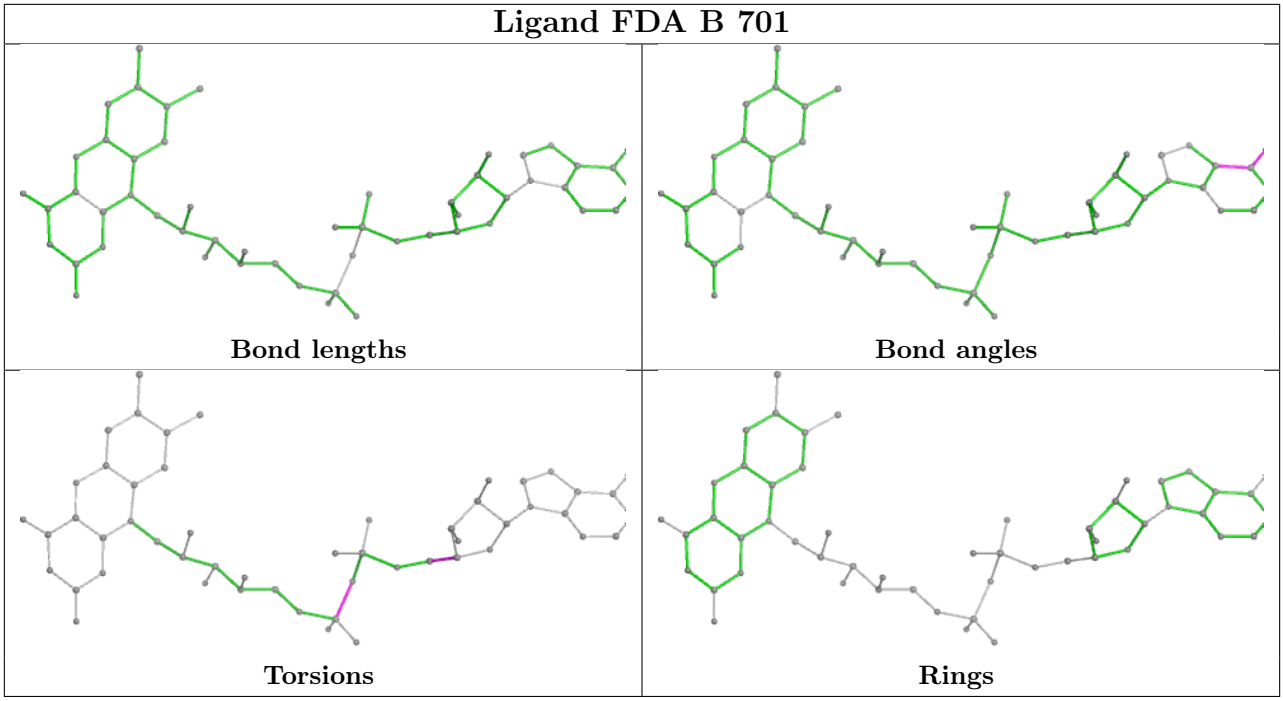
Bond angles



Torsions



Rings



5.7 Other polymers

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, 95^{th} 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	537/562 (95%)	0.83	75 (13%)	2 3	31, 40, 60, 128	0
1	B	531/562 (94%)	0.85	75 (14%)	2 3	32, 39, 58, 114	0
1	C	532/562 (94%)	0.99	89 (16%)	1 2	33, 45, 69, 123	0
1	D	535/562 (95%)	1.01	94 (17%)	1 1	34, 46, 74, 127	0
All	All	2135/2248 (94%)	0.92	333 (15%)	2 2	31, 42, 67, 128	0

All (333) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	599	GLN	8.8
1	D	323	LYS	8.7
1	B	297	ASP	6.9
1	B	321	HIS	6.4
1	C	296	GLY	6.3
1	B	296	GLY	6.1
1	A	448	ALA	6.0
1	A	514[A]	HIS	5.7
1	C	297	ASP	5.5
1	D	297	ASP	5.4
1	D	418	GLY	5.2
1	B	395	TYR	5.2
1	A	399	ILE	5.1
1	D	399	ILE	5.1
1	C	395	TYR	5.0
1	B	295	VAL	4.9
1	A	324	GLY	4.9
1	D	322	LYS	4.9
1	C	399	ILE	4.7
1	C	299	GLU	4.7
1	C	512	TRP	4.7

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Mol	Chain	Res	Type	RSRZ
1	A	110	ASN	4.7
1	D	447	ASN	4.7
1	C	521	ALA	4.6
1	D	321	HIS	4.6
1	C	514[A]	HIS	4.6
1	C	322	LYS	4.5
1	B	343	ASN	4.5
1	A	458	CYS	4.5
1	D	395	TYR	4.5
1	B	399	ILE	4.5
1	D	514[A]	HIS	4.4
1	A	470	ILE	4.4
1	D	448	ALA	4.4
1	C	341	ASN	4.4
1	B	396	GLY	4.4
1	C	397	PRO	4.4
1	D	318	ALA	4.3
1	B	522	PHE	4.2
1	C	343	ASN	4.2
1	B	467	GLY	4.2
1	D	324	GLY	4.2
1	D	458	CYS	4.2
1	B	514[A]	HIS	4.2
1	D	397	PRO	4.2
1	A	323	LYS	4.2
1	A	398	SER	4.2
1	C	295	VAL	4.2
1	D	110	ASN	4.1
1	D	463	ALA	4.1
1	D	299	GLU	4.1
1	A	343	ASN	4.1
1	D	319	PHE	4.1
1	D	512	TRP	4.0
1	B	458	CYS	4.0
1	A	467	GLY	4.0
1	A	512	TRP	4.0
1	D	459	TRP	4.0
1	C	522	PHE	4.0
1	B	463	ALA	4.0
1	C	396	GLY	4.0
1	B	398	SER	3.9
1	C	345	GLU	3.9

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Mol	Chain	Res	Type	RSRZ
1	A	397	PRO	3.9
1	A	522	PHE	3.9
1	B	513	ASN	3.9
1	D	345	GLU	3.9
1	A	396	GLY	3.9
1	A	460	THR	3.9
1	B	512	TRP	3.8
1	C	420	LYS	3.8
1	B	397	PRO	3.8
1	D	468	SER	3.8
1	C	458	CYS	3.7
1	A	468	SER	3.7
1	D	325	GLY	3.7
1	D	524	PHE	3.7
1	D	129	SER	3.7
1	D	412	THR	3.7
1	D	460	THR	3.7
1	B	322	LYS	3.7
1	D	445	ASN	3.7
1	C	523	ALA	3.7
1	B	195	SER	3.6
1	C	398	SER	3.6
1	C	321	HIS	3.6
1	A	217	PHE	3.6
1	D	398	SER	3.6
1	A	322	LYS	3.6
1	D	417	ASN	3.6
1	A	457	TYR	3.6
1	C	520	GLY	3.6
1	D	499	TYR	3.6
1	B	518	THR	3.6
1	D	182	GLY	3.5
1	D	396	GLY	3.5
1	A	523	ALA	3.5
1	A	341	ASN	3.5
1	A	345	GLU	3.5
1	C	328	PHE	3.5
1	B	519	MET	3.5
1	D	343	ASN	3.5
1	B	447	ASN	3.5
1	C	469	LEU	3.5
1	C	459	TRP	3.5

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Mol	Chain	Res	Type	RSRZ
1	A	513	ASN	3.4
1	A	469	LEU	3.4
1	A	395	TYR	3.4
1	B	293	GLY	3.4
1	C	447	ASN	3.4
1	A	521	ALA	3.4
1	C	276	GLY	3.4
1	C	369	LEU	3.3
1	A	447	ASN	3.3
1	C	418	GLY	3.3
1	D	326	ASN	3.3
1	B	253	PHE	3.3
1	B	520	GLY	3.3
1	A	463	ALA	3.3
1	A	459	TRP	3.3
1	C	198	ASP	3.3
1	A	109	PRO	3.3
1	D	112	GLY	3.2
1	A	510	TRP	3.2
1	C	519	MET	3.2
1	C	319	PHE	3.2
1	B	523	ALA	3.2
1	D	419	GLU	3.2
1	A	464	GLU	3.2
1	D	522	PHE	3.1
1	B	466	MET	3.1
1	C	327	ALA	3.1
1	C	524	PHE	3.1
1	C	467	GLY	3.1
1	A	519	MET	3.1
1	C	470	ILE	3.1
1	A	342	PRO	3.1
1	B	346	ASP	3.1
1	B	470	ILE	3.1
1	D	132	LYS	3.0
1	D	465	ARG	3.0
1	B	420	LYS	3.0
1	C	346	ASP	3.0
1	D	277	TRP	3.0
1	B	370	PRO	3.0
1	C	419	GLU	2.9
1	C	463	ALA	2.9

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Mol	Chain	Res	Type	RSRZ
1	A	465	ARG	2.9
1	C	393	LEU	2.9
1	D	64	GLY	2.9
1	D	466	MET	2.9
1	B	524	PHE	2.9
1	B	369	LEU	2.9
1	B	459	TRP	2.9
1	B	552	ALA	2.9
1	D	558	ALA	2.9
1	D	464	GLU	2.9
1	A	369	LEU	2.9
1	D	461	ASN	2.9
1	C	344	LYS	2.8
1	D	275	THR	2.8
1	D	414	GLN	2.8
1	D	131	ASP	2.8
1	A	446	THR	2.8
1	B	457	TYR	2.8
1	D	167	PRO	2.8
1	D	518	THR	2.8
1	A	293	GLY	2.8
1	B	464	GLU	2.8
1	A	552	ALA	2.8
1	B	521	ALA	2.8
1	C	318	ALA	2.8
1	C	518	THR	2.8
1	A	524	PHE	2.8
1	C	466	MET	2.8
1	C	414	GLN	2.8
1	D	511	ASP	2.7
1	A	321	HIS	2.7
1	A	466	MET	2.7
1	C	457	TYR	2.7
1	B	469	LEU	2.7
1	C	390	LEU	2.7
1	A	433	PRO	2.7
1	B	298	GLY	2.7
1	D	344	LYS	2.7
1	D	401	ILE	2.7
1	D	276	GLY	2.7
1	D	371	VAL	2.7
1	A	420	LYS	2.7

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Mol	Chain	Res	Type	RSRZ
1	A	542	ALA	2.7
1	D	467	GLY	2.7
1	D	203	LYS	2.7
1	D	457	TYR	2.7
1	C	356	GLN	2.7
1	C	64	GLY	2.7
1	B	461	ASN	2.6
1	B	203	LYS	2.6
1	D	510	TRP	2.6
1	B	251	PRO	2.6
1	D	137	PRO	2.6
1	A	461	ASN	2.6
1	A	347	SER	2.6
1	A	370	PRO	2.6
1	A	371	VAL	2.6
1	B	371	VAL	2.6
1	D	519	MET	2.6
1	C	182	GLY	2.6
1	C	496	ASP	2.6
1	C	446	THR	2.6
1	C	406	LYS	2.6
1	D	543	ASN	2.6
1	B	276	GLY	2.6
1	A	515	ASN	2.6
1	B	344	LYS	2.5
1	C	378	LYS	2.5
1	C	371	VAL	2.5
1	C	298	GLY	2.5
1	C	460	THR	2.5
1	D	199	ILE	2.5
1	C	416	LYS	2.5
1	B	66	ARG	2.5
1	B	460	THR	2.5
1	B	294	GLU	2.5
1	B	345	GLU	2.5
1	C	394	GLN	2.5
1	C	510	TRP	2.5
1	C	120	GLY	2.5
1	D	520	GLY	2.5
1	D	513	ASN	2.5
1	A	511	ASP	2.5
1	B	341	ASN	2.4

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Mol	Chain	Res	Type	RSRZ
1	B	182	GLY	2.4
1	B	137	PRO	2.4
1	B	465	ARG	2.4
1	C	164	ASN	2.4
1	C	513	ASN	2.4
1	B	414	GLN	2.4
1	A	299	GLU	2.4
1	D	368	PRO	2.4
1	C	525	PHE	2.4
1	B	390	LEU	2.4
1	B	468	SER	2.4
1	B	280	ARG	2.4
1	C	359	LYS	2.4
1	D	341	ASN	2.4
1	C	89	PRO	2.4
1	C	293	GLY	2.4
1	D	133	GLY	2.4
1	C	132	LYS	2.4
1	A	368	PRO	2.4
1	D	162	LYS	2.4
1	A	276	GLY	2.4
1	A	327	ALA	2.3
1	C	129	SER	2.3
1	A	462	ASP	2.3
1	B	198	ASP	2.3
1	D	462	ASP	2.3
1	C	370	PRO	2.3
1	A	520	GLY	2.3
1	C	184	SER	2.3
1	D	521	ALA	2.3
1	C	368	PRO	2.3
1	A	298	GLY	2.3
1	D	84[A]	GLN	2.3
1	C	342	PRO	2.3
1	D	346	ASP	2.3
1	C	133	GLY	2.3
1	C	468	SER	2.3
1	D	195	SER	2.3
1	B	525	PHE	2.3
1	C	515	ASN	2.3
1	D	515	ASN	2.3
1	C	465	ARG	2.3

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Mol	Chain	Res	Type	RSRZ
1	D	295	VAL	2.3
1	C	166	SER	2.3
1	C	461	ASN	2.3
1	A	394	GLN	2.3
1	C	187	ALA	2.3
1	D	327	ALA	2.3
1	D	421	PHE	2.3
1	D	559	TRP	2.3
1	D	193	ASN	2.3
1	A	578	THR	2.2
1	B	319	PHE	2.2
1	D	153	HIS	2.2
1	A	277	TRP	2.2
1	B	417	ASN	2.2
1	A	344	LYS	2.2
1	B	462	ASP	2.2
1	C	448	ALA	2.2
1	B	368	PRO	2.2
1	D	413	GLY	2.2
1	C	280	ARG	2.2
1	D	128	LYS	2.2
1	C	552	ALA	2.2
1	A	226	THR	2.2
1	A	120	GLY	2.2
1	C	167	PRO	2.2
1	C	274	SER	2.2
1	A	346	ASP	2.2
1	A	221	GLN	2.2
1	D	154	LYS	2.2
1	B	110	ASN	2.2
1	D	370	PRO	2.2
1	D	411	THR	2.2
1	D	523	ALA	2.2
1	A	559	TRP	2.1
1	B	196	LEU	2.1
1	B	292	PHE	2.1
1	A	518	THR	2.1
1	B	510	TRP	2.1
1	A	598	GLU	2.1
1	D	342	PRO	2.1
1	C	87	ASP	2.1
1	C	193	ASN	2.1

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Mol	Chain	Res	Type	RSRZ
1	D	280	ARG	2.1
1	A	517	LEU	2.1
1	B	347	SER	2.1
1	B	496	ASP	2.1
1	D	198	ASP	2.1
1	D	420	LYS	2.1
1	B	250	SER	2.0
1	A	393	LEU	2.0
1	B	394	GLN	2.0
1	D	423	LEU	2.0
1	A	509	SER	2.0
1	B	277	TRP	2.0
1	B	188	PRO	2.0
1	B	401	ILE	2.0
1	C	205	VAL	2.0
1	D	394	GLN	2.0
1	A	563	ALA	2.0
1	C	350	VAL	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, 95^{th} 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
5	PGR	D	714	5/5	0.39	1.05	39,47,50,50	13
4	SO4	B	711	5/5	0.50	0.40	41,47,55,58	5
5	PGR	B	715	5/5	0.55	0.63	33,40,47,47	13
5	PGR	A	717	5/5	0.57	0.61	32,38,50,50	13
4	SO4	D	710	5/5	0.62	0.30	88,95,102,120	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
5	PGR	C	713	5/5	0.64	0.60	39,47,53,53	13
4	SO4	B	713	5/5	0.67	0.37	45,52,58,63	5
4	SO4	B	709	5/5	0.68	0.38	79,81,91,97	5
4	SO4	A	710	5/5	0.68	0.34	56,57,66,71	5
4	SO4	B	703	5/5	0.69	0.32	37,45,51,53	5
4	SO4	C	710	5/5	0.70	0.39	83,85,92,95	5
5	PGR	B	716	5/5	0.74	0.26	48,57,62,65	0
4	SO4	D	712	5/5	0.75	0.30	50,52,55,58	5
4	SO4	C	712	5/5	0.75	0.29	52,52,57,60	5
4	SO4	A	708	5/5	0.76	0.41	89,96,98,105	5
4	SO4	B	708	5/5	0.76	0.21	59,59,70,73	5
4	SO4	D	709	5/5	0.77	0.27	51,55,58,58	5
4	SO4	B	710	5/5	0.77	0.38	67,68,74,83	5
4	SO4	C	711	5/5	0.79	0.47	54,58,61,63	5
4	SO4	B	712	5/5	0.79	0.45	63,66,70,77	5
4	SO4	A	714	5/5	0.80	0.35	74,76,84,89	5
4	SO4	D	708	5/5	0.81	0.30	74,82,87,96	5
6	PGO	B	714	5/5	0.81	0.22	54,65,67,75	0
4	SO4	A	715	5/5	0.82	0.25	55,56,58,62	5
4	SO4	D	707	5/5	0.82	0.28	66,69,70,75	5
4	SO4	A	712	5/5	0.83	0.29	53,55,56,58	5
4	SO4	B	707	5/5	0.83	0.30	67,68,71,83	5
4	SO4	D	713	5/5	0.83	0.45	86,86,91,103	5
4	SO4	B	706	5/5	0.84	0.22	40,43,44,45	5
4	SO4	D	706	5/5	0.84	0.25	52,55,58,62	5
5	PGR	A	716	5/5	0.84	0.32	35,44,49,56	13
4	SO4	C	707	5/5	0.84	0.38	77,82,90,96	5
5	PGR	A	720	5/5	0.84	0.24	47,57,62,62	0
4	SO4	B	704	5/5	0.85	0.23	47,47,49,55	5
3	GLN	A	702	10/10	0.85	0.26	36,46,58,58	0
4	SO4	C	709	5/5	0.85	0.42	69,75,81,91	5
4	SO4	C	706	5/5	0.86	0.30	49,52,57,59	5
3	GLN	C	702	10/10	0.86	0.25	38,47,57,57	0
4	SO4	A	713	5/5	0.86	0.38	71,76,82,84	5
4	SO4	D	711	5/5	0.87	0.27	53,56,59,62	5
4	SO4	C	708	5/5	0.87	0.19	69,72,79,87	5
4	SO4	D	703	5/5	0.87	0.28	49,51,57,58	5
4	SO4	D	704	5/5	0.87	0.19	46,50,52,53	5
4	SO4	A	703	5/5	0.87	0.23	40,46,48,50	5
5	PGR	A	719	5/5	0.87	0.12	45,54,59,65	0
4	SO4	C	705	5/5	0.88	0.19	72,75,76,77	5
4	SO4	A	711	5/5	0.88	0.18	48,53,59,62	5

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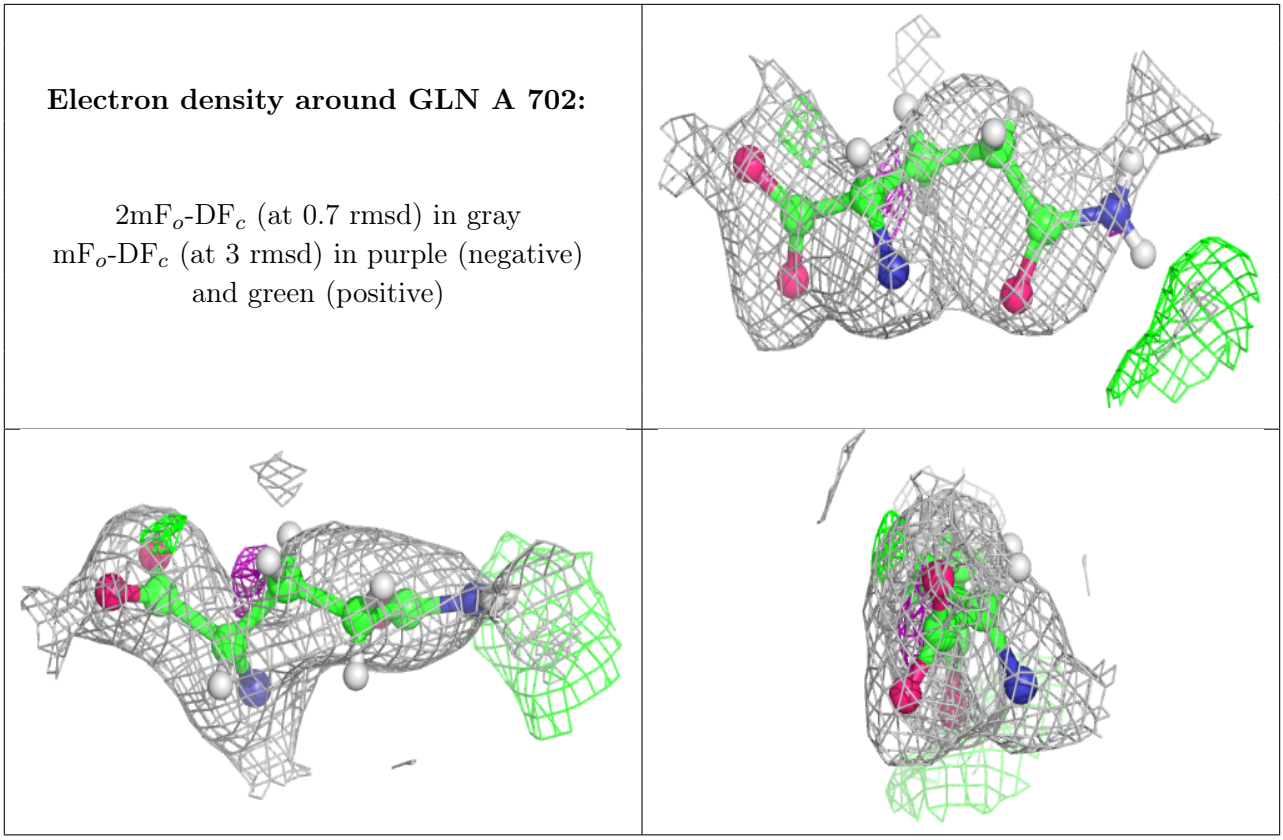
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
6	PGO	A	718	5/5	0.88	0.49	31,43,48,51	13
4	SO4	C	703	5/5	0.88	0.18	57,60,66,66	5
3	GLN	B	702	10/10	0.90	0.26	37,44,53,53	0
4	SO4	A	709	5/5	0.90	0.29	52,53,58,59	5
5	PGR	C	715	5/5	0.90	0.20	48,57,67,67	0
4	SO4	A	707	5/5	0.91	0.26	38,41,44,45	5
2	FDA	D	701	53/53	0.92	0.18	32,38,46,47	0
4	SO4	D	705	5/5	0.92	0.19	51,54,58,61	5
2	FDA	C	701	53/53	0.92	0.19	34,38,46,47	0
3	GLN	D	702	10/10	0.93	0.25	41,45,54,54	0
2	FDA	B	701	53/53	0.94	0.20	29,34,41,43	0
5	PGR	C	714	5/5	0.94	0.10	50,63,75,75	0
2	FDA	A	701	53/53	0.94	0.19	29,34,42,43	0
4	SO4	A	704	5/5	0.94	0.23	47,51,54,58	5
4	SO4	A	705	5/5	0.94	0.32	40,44,46,48	5
4	SO4	A	706	5/5	0.94	0.14	46,47,52,53	5
4	SO4	C	704	5/5	0.96	0.11	51,53,57,63	5
4	SO4	B	705	5/5	0.97	0.14	48,48,49,51	5

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.

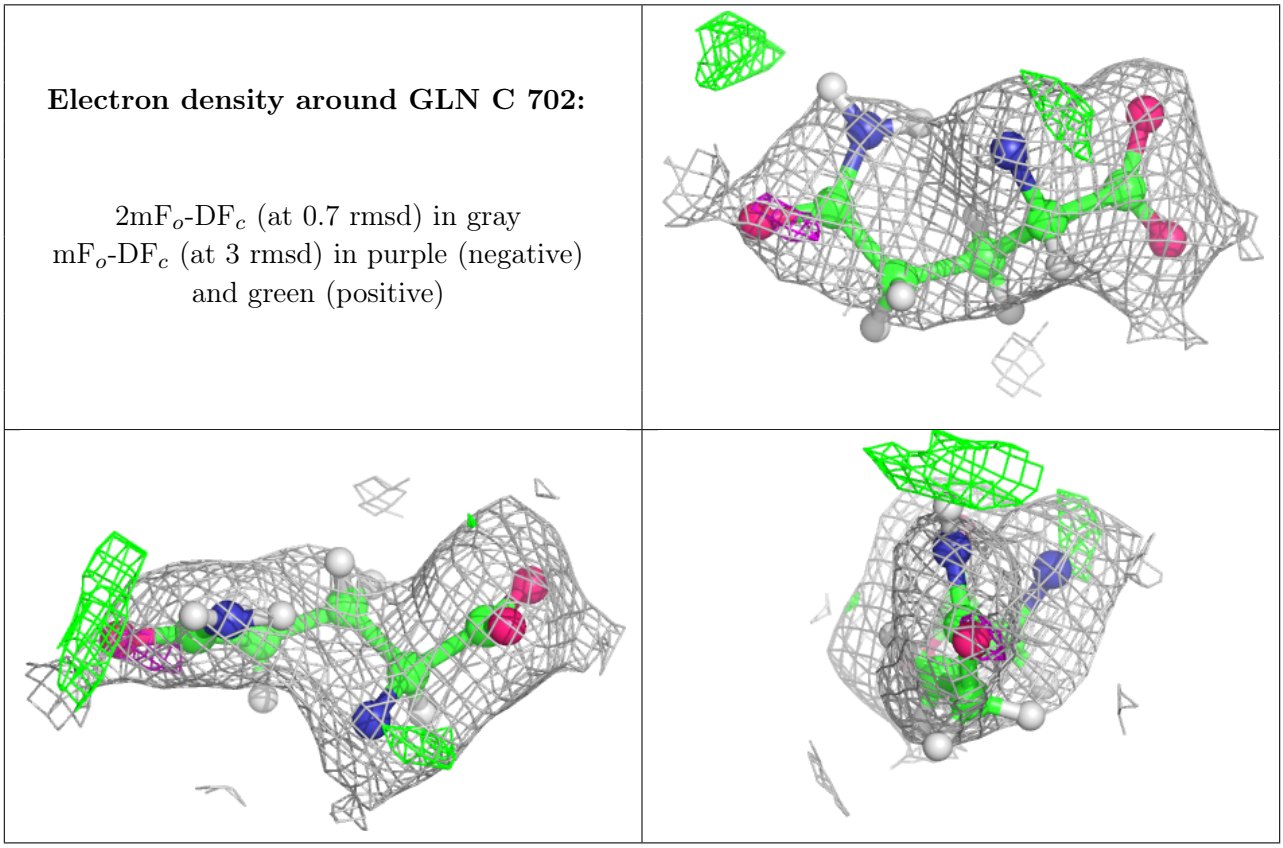
Electron density around GLN A 702:

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



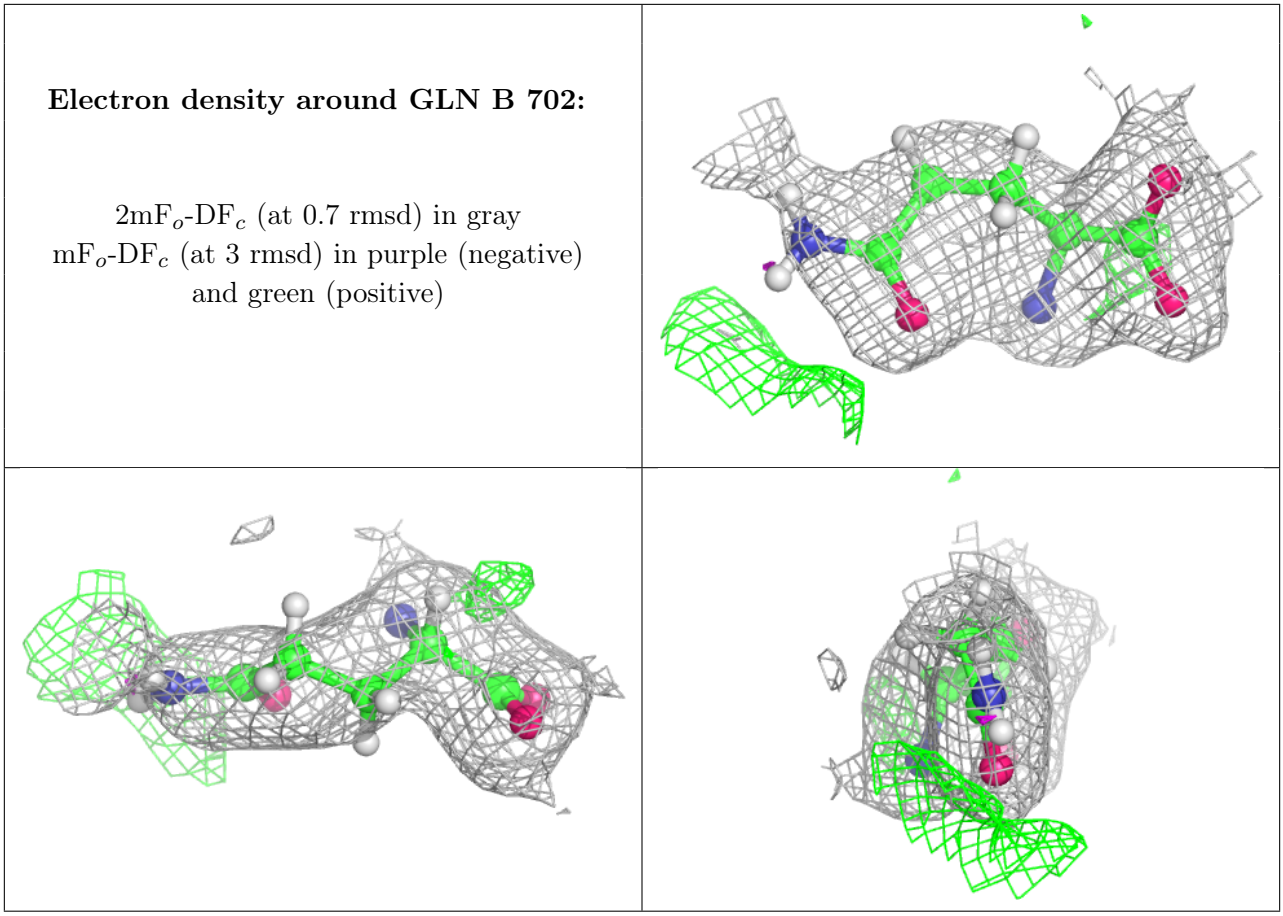
Electron density around GLN C 702:

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



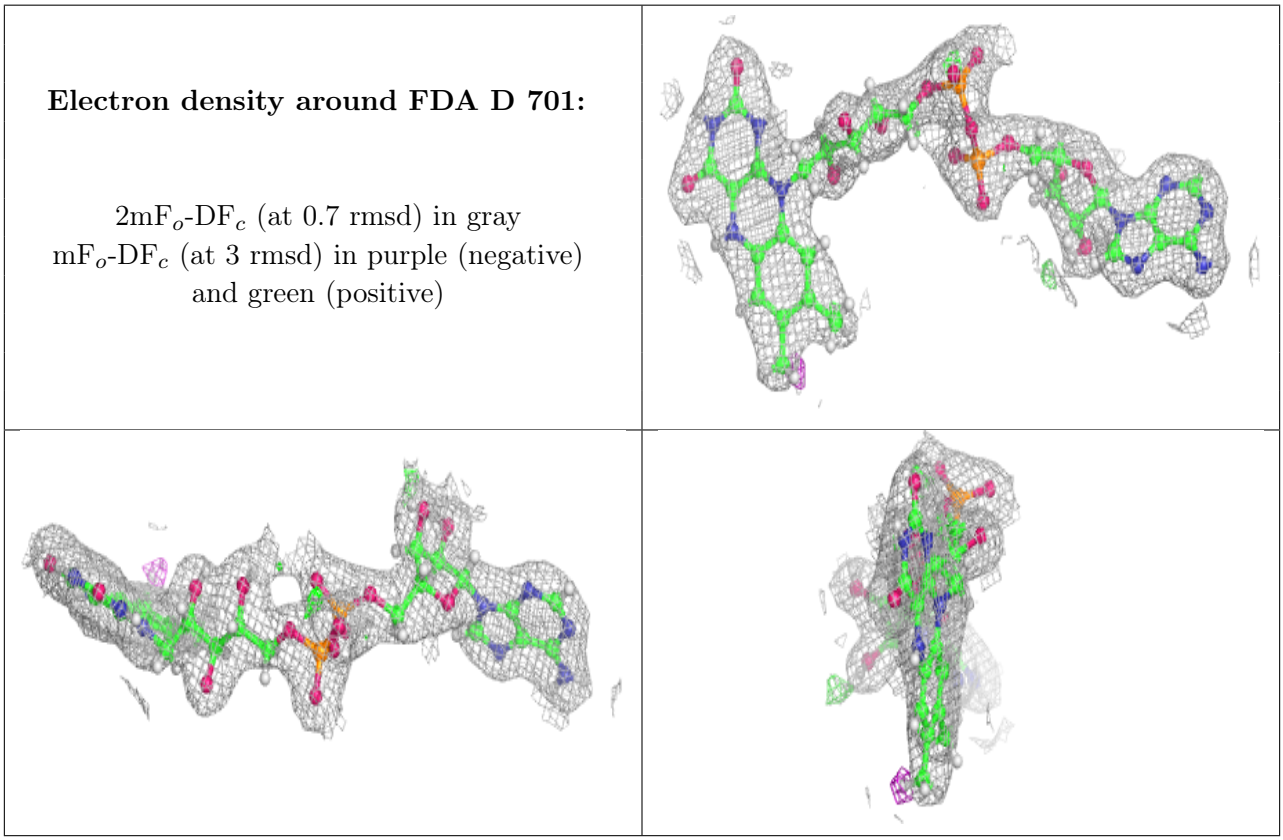
Electron density around GLN B 702:

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



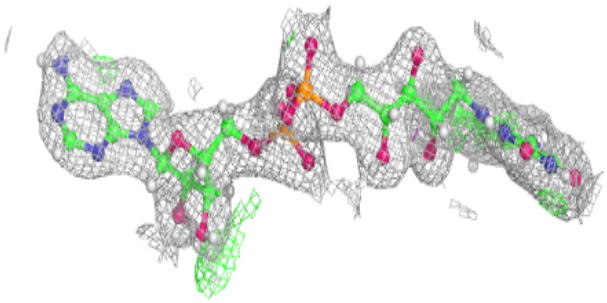
Electron density around FDA D 701:

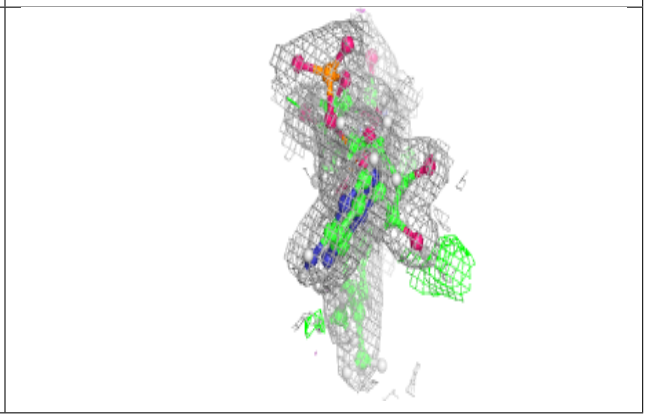
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



Electron density around FDA C 701:

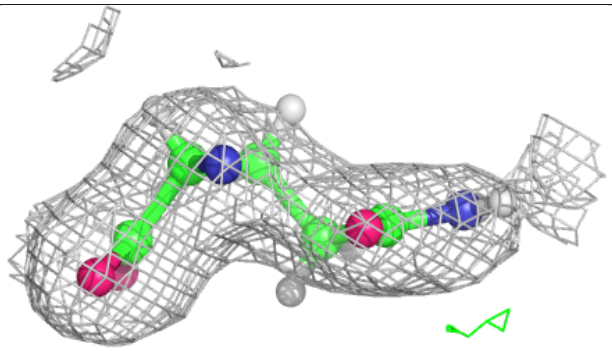
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

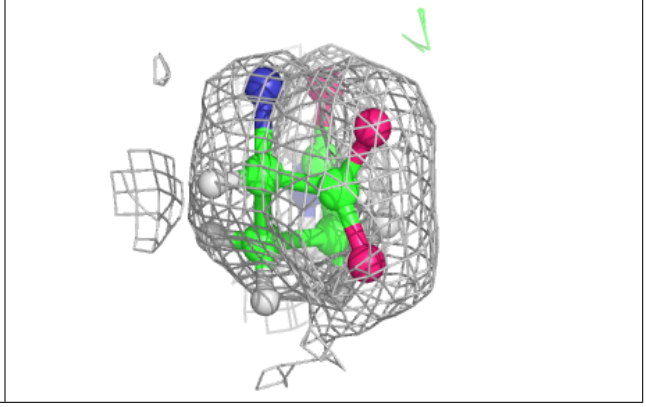




Electron density around GLN D 702:

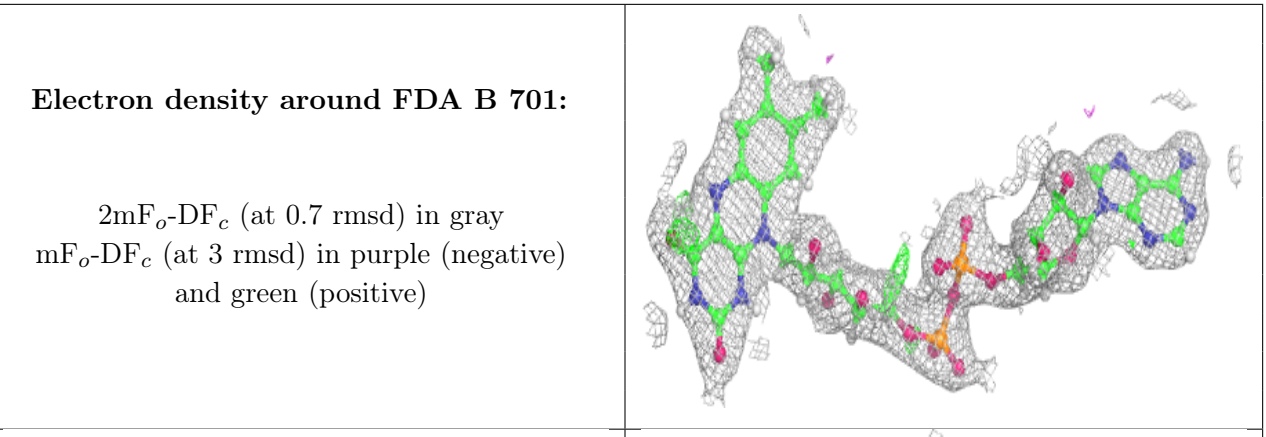
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)





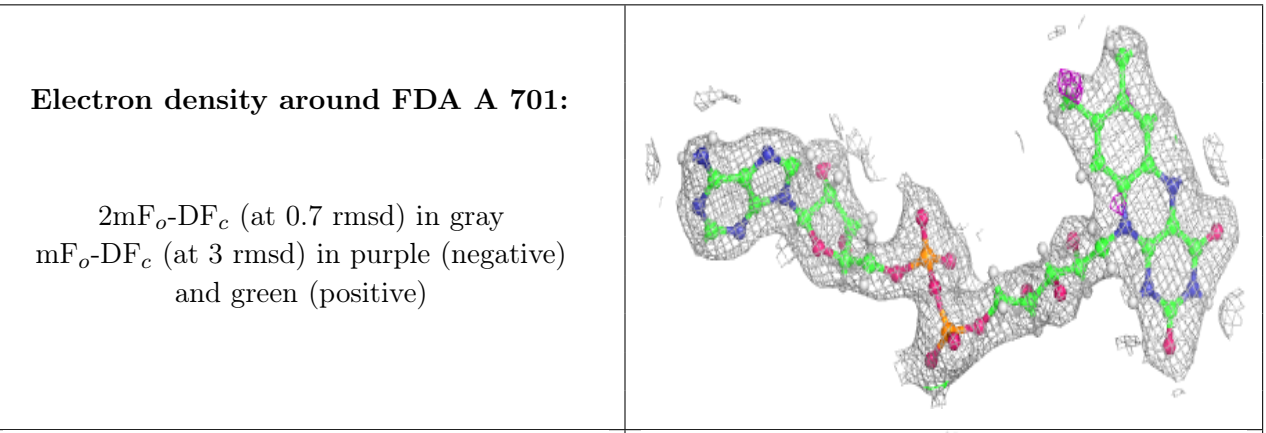
Electron density around FDA B 701:

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



Electron density around FDA A 701:

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



6.5 Other polymers (i)

There are no such residues in this entry.