



Full wwPDB X-ray Structure Validation Report ⓘ

Aug 18, 2026 – 10:16 AM EDT

PDB ID : 13CV / pdb_000013cv
Title : Crystal structure of covalent inhibitor 3-(2-chloroacetamido)-N-(pyridin-2-yl) benzamide bound to Ubiquitin C-terminal Hydrolase-L3
Authors : Patel, R.; Pannala, N.; Flaherty, D.; Das, C.
Deposited on : 2026-04-30
Resolution : 1.94 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4	:	9.0.015 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.50

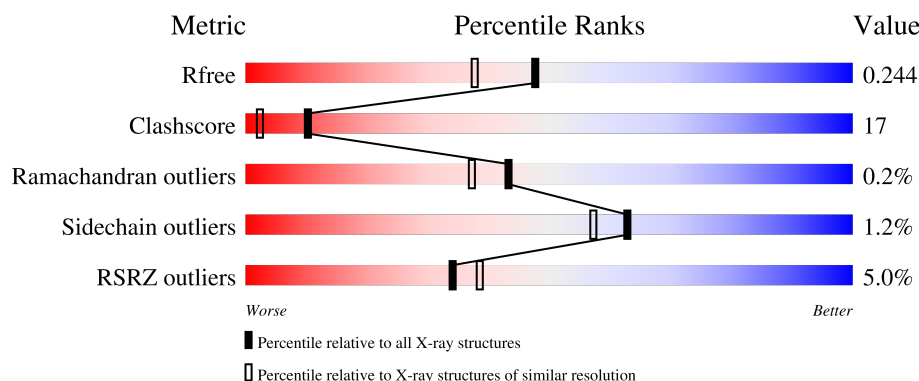
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.94 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}	180053	1452 (1.94-1.94)
Clashscore	190562	1494 (1.94-1.94)
Ramachandran outliers	187476	1479 (1.94-1.94)
Sidechain outliers	187428	1479 (1.94-1.94)
RSRZ outliers	180081	1453 (1.94-1.94)

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	235	0% 77% 15% • 7%
1	B	235	4% 65% 26% 9%
1	C	235	5% 60% 29% • 9%
1	D	235	8% 66% 22% •• 9%

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
3	SO4	A	302	-	-	X	-
3	SO4	D	304	-	-	X	-

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 7253 atoms, of which 48 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.

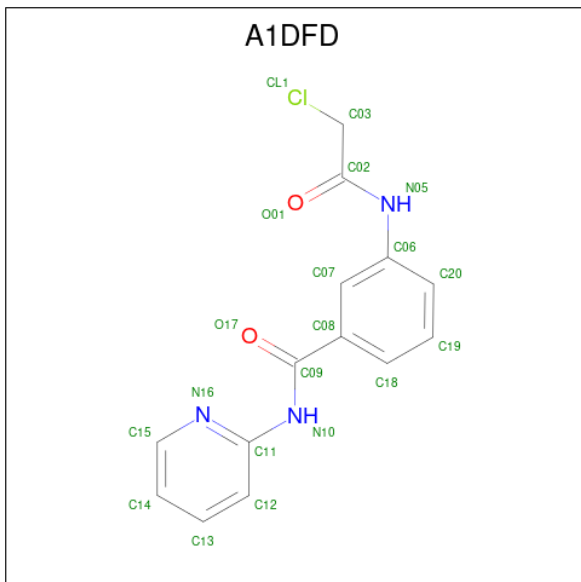
- Molecule 1 is a protein called Ubiquitin carboxyl-terminal hydrolase isozyme L3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	218	Total	C	N	O	S	5	2	0
			1719	1094	283	333	9			
1	B	215	Total	C	N	O	S	9	1	0
			1678	1068	274	327	9			
1	C	215	Total	C	N	O	S	5	1	0
			1681	1073	276	323	9			
1	D	215	Total	C	N	O	S	9	0	0
			1696	1081	277	329	9			

There are 20 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-4	GLY	-	expression tag	UNP P15374
A	-3	PRO	-	expression tag	UNP P15374
A	-2	LEU	-	expression tag	UNP P15374
A	-1	GLY	-	expression tag	UNP P15374
A	0	SER	-	expression tag	UNP P15374
B	-4	GLY	-	expression tag	UNP P15374
B	-3	PRO	-	expression tag	UNP P15374
B	-2	LEU	-	expression tag	UNP P15374
B	-1	GLY	-	expression tag	UNP P15374
B	0	SER	-	expression tag	UNP P15374
C	-4	GLY	-	expression tag	UNP P15374
C	-3	PRO	-	expression tag	UNP P15374
C	-2	LEU	-	expression tag	UNP P15374
C	-1	GLY	-	expression tag	UNP P15374
C	0	SER	-	expression tag	UNP P15374
D	-4	GLY	-	expression tag	UNP P15374
D	-3	PRO	-	expression tag	UNP P15374
D	-2	LEU	-	expression tag	UNP P15374
D	-1	GLY	-	expression tag	UNP P15374
D	0	SER	-	expression tag	UNP P15374

- Molecule 2 is 3-(2-chloroacetamido)-N-(pyridin-2-yl)benzamide (CCD ID: A1DFD) (formula: $C_{14}H_{12}ClN_3O_2$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	H	N	O	0	0
			31	14	12	3	2		
2	B	1	Total	C	H	N	O	0	0
			31	14	12	3	2		
2	C	1	Total	C	H	N	O	0	0
			31	14	12	3	2		
2	D	1	Total	C	H	N	O	0	0
			31	14	12	3	2		

- Molecule 3 is SULFATE ION (CCD ID: SO4) (formula: O_4S).



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

- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	116	Total	O	0	0
			116	116		
4	B	77	Total	O	0	0
			77	77		

Continued on next page...

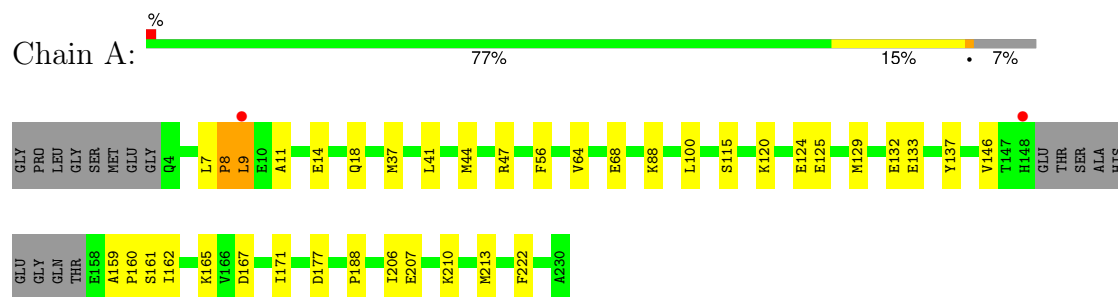
Continued from previous page...

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	C	46	Total 46	O 46	0	0
4	D	66	Total 66	O 66	0	0

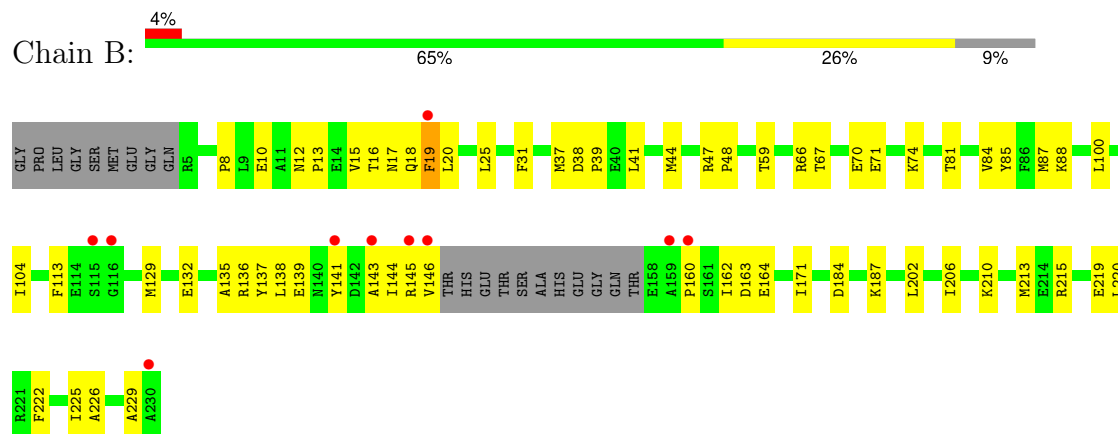
3 Residue-property plots [i](#)

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.

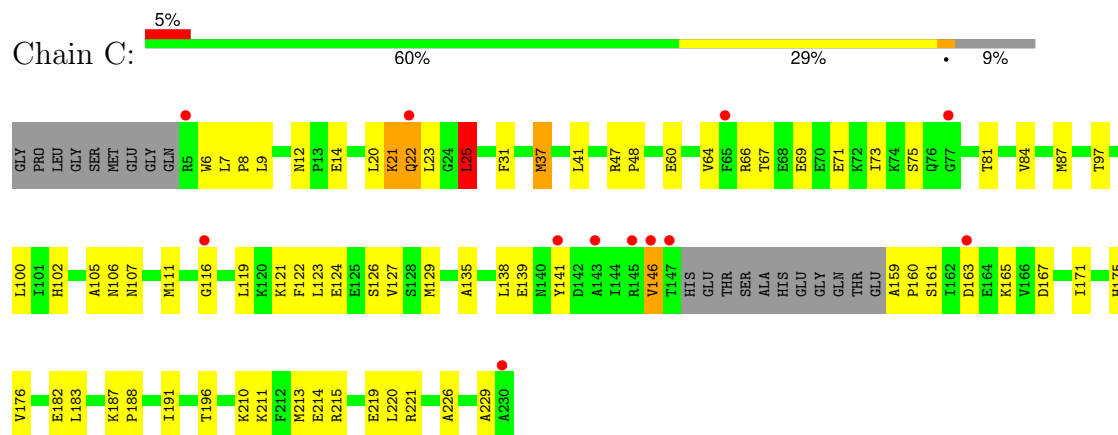
- Molecule 1: Ubiquitin carboxyl-terminal hydrolase isozyme L3



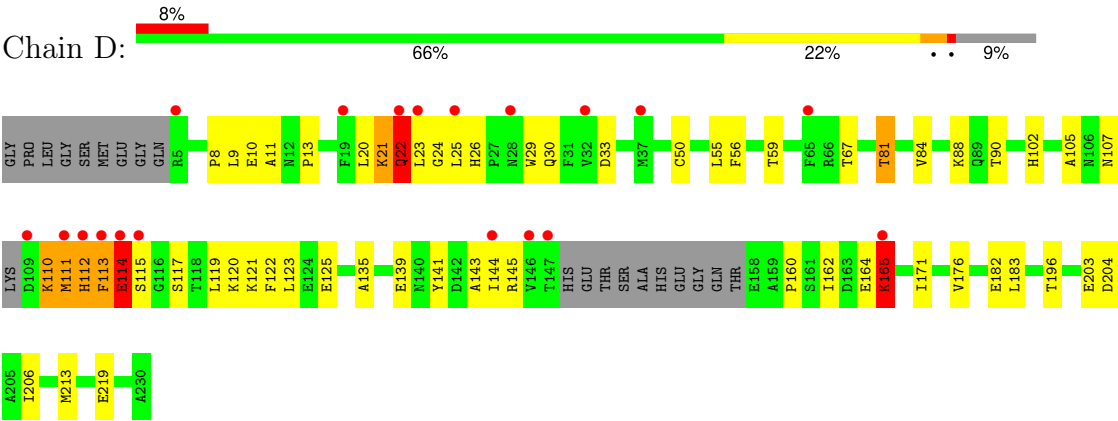
- Molecule 1: Ubiquitin carboxyl-terminal hydrolase isozyme L3



- Molecule 1: Ubiquitin carboxyl-terminal hydrolase isozyme L3



● Molecule 1: Ubiquitin carboxyl-terminal hydrolase isozyme L3



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	48.03Å 85.61Å 124.08Å 90.00° 96.81° 90.00°	Depositor
Resolution (Å)	42.80 – 1.94 42.80 – 1.95	Depositor EDS
% Data completeness (in resolution range)	95.6 (42.80-1.94) 95.7 (42.80-1.95)	Depositor EDS
R_{merge}	0.13	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.47 (at 1.95Å)	Xtriage
Refinement program	PHENIX (1.20.1_4487: ???)	Depositor
R, R_{free}	0.204 , 0.244 0.204 , 0.244	Depositor DCC
R_{free} test set	1954 reflections (2.66%)	wwPDB-VP
Wilson B-factor (Å ²)	33.9	Xtriage
Anisotropy	0.213	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.35 , 50.9	EDS
L-test for twinning ²	$\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	7253	wwPDB-VP
Average B, all atoms (Å ²)	50.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 6.53% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: SO4, A1DFD

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	0.71	2/1757 (0.1%)	0.94	6/2385 (0.3%)
1	B	0.60	0/1716	0.78	4/2333 (0.2%)
1	C	0.60	0/1719	0.87	9/2334 (0.4%)
1	D	0.74	3/1732 (0.2%)	1.56	20/2344 (0.9%)
All	All	0.67	5/6924 (0.1%)	1.08	39/9396 (0.4%)

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	B	0	1
1	D	0	6
All	All	0	7

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	113	PHE	C-N	7.58	1.44	1.33
1	A	8	PRO	C-N	-7.43	1.24	1.33
1	A	9	LEU	N-CA	-7.43	1.37	1.46
1	D	165	LYS	CE-NZ	-6.84	1.28	1.49
1	D	114	GLU	CA-CB	6.27	1.64	1.53

All (39) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	21	LYS	CA-C-N	-28.11	71.35	122.50
1	D	21	LYS	C-N-CA	-28.11	71.35	122.50

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	114	GLU	N-CA-CB	21.98	147.63	110.49
1	D	114	GLU	CA-CB-CG	21.00	156.09	114.10
1	D	113	PHE	CA-C-N	-17.92	87.32	121.54
1	D	113	PHE	C-N-CA	-17.92	87.32	121.54
1	D	114	GLU	N-CA-C	-16.75	75.12	110.80
1	A	9	LEU	N-CA-CB	-14.21	88.77	109.94
1	A	8	PRO	CA-C-N	13.04	138.14	120.54
1	A	8	PRO	C-N-CA	13.04	138.14	120.54
1	D	22	GLN	CG-CD-NE2	-12.53	97.61	116.40
1	A	9	LEU	CB-CG-CD1	-11.66	75.72	110.70
1	D	22	GLN	CB-CG-CD	11.17	131.59	112.60
1	D	22	GLN	N-CA-C	-11.05	96.32	111.56
1	B	19	PHE	N-CA-C	-10.35	100.19	113.12
1	C	21	LYS	CA-C-N	-9.42	106.72	120.28
1	C	21	LYS	C-N-CA	-9.42	106.72	120.28
1	D	114	GLU	CB-CA-C	-9.25	92.02	110.42
1	D	21	LYS	CB-CG-CD	8.41	130.64	111.30
1	D	165	LYS	CA-CB-CG	-8.09	97.93	114.10
1	A	9	LEU	CB-CA-C	7.94	123.51	110.81
1	C	22	GLN	N-CA-CB	7.59	121.91	110.22
1	A	9	LEU	CB-CG-CD2	-7.57	88.00	110.70
1	D	111	MET	CG-SD-CE	7.24	116.83	100.90
1	D	21	LYS	CG-CD-CE	-6.90	95.43	111.30
1	C	22	GLN	N-CA-C	-6.62	104.10	111.71
1	D	22	GLN	CB-CA-C	6.53	121.37	111.18
1	D	112	HIS	N-CA-C	6.29	118.65	108.34
1	D	165	LYS	N-CA-C	-5.94	97.04	107.73
1	B	19	PHE	N-CA-CB	-5.76	101.61	110.42
1	C	25	LEU	N-CA-CB	5.51	119.38	110.41
1	C	22	GLN	CA-C-N	5.37	131.81	121.18
1	C	22	GLN	C-N-CA	5.37	131.81	121.18
1	C	25	LEU	CB-CA-C	-5.22	100.58	109.51
1	C	22	GLN	CA-CB-CG	5.21	124.53	114.10
1	B	19	PHE	CA-C-N	5.21	127.21	120.44
1	B	19	PHE	C-N-CA	5.21	127.21	120.44
1	D	111	MET	CB-CA-C	5.05	119.01	109.37
1	D	111	MET	CA-CB-CG	5.02	124.14	114.10

There are no chirality outliers.

All (7) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	B	18	GLN	Peptide
1	D	110	LYS	Peptide
1	D	114	GLU	Mainchain,Sidechain
1	D	165	LYS	Mainchain
1	D	22	GLN	Peptide,Sidechain

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	1719	0	1634	40	0
1	B	1678	0	1573	50	0
1	C	1681	0	1602	65	0
1	D	1696	0	1636	73	0
2	A	19	12	0	0	0
2	B	19	12	0	1	0
2	C	19	12	0	0	0
2	D	19	12	0	0	0
3	A	20	0	0	3	0
3	B	10	0	0	0	0
3	C	5	0	0	0	0
3	D	15	0	0	8	0
4	A	116	0	0	4	0
4	B	77	0	0	3	0
4	C	46	0	0	2	0
4	D	66	0	0	2	0
All	All	7205	48	6445	227	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 17.

All (227) 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:D:114:GLU:HG2	3:D:304:SO4:S	1.88	1.14
1:D:114:GLU:HG2	3:D:304:SO4:O1	1.43	1.13
1:A:9:LEU:HD23	1:A:161:SER:HA	1.29	1.06

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:9:LEU:CD2	1:A:161:SER:HA	1.90	1.01
1:D:107:ASN:HB3	1:D:111:MET:HE3	1.43	1.01
1:D:107:ASN:CB	1:D:111:MET:HE3	1.92	0.99
1:B:129:MET:HE1	1:B:137:TYR:HB2	1.46	0.98
1:A:167:ASP:OD1	4:A:401:HOH:O	1.84	0.95
1:B:144:ILE:HG22	1:B:145:ARG:H	1.32	0.94
1:A:177[A]:ASP:OD2	4:A:402:HOH:O	1.85	0.92
1:D:21:LYS:HG2	1:D:22:GLN:HB2	1.49	0.91
1:A:9:LEU:HD22	1:A:160:PRO:C	1.96	0.91
1:D:141:TYR:HE2	1:D:143:ALA:HB3	1.34	0.90
1:D:141:TYR:CE2	1:D:143:ALA:HB3	2.08	0.89
1:C:219:GLU:OE2	4:C:401:HOH:O	1.92	0.88
1:D:160:PRO:HB2	1:D:165:LYS:HZ1	1.41	0.86
1:C:167:ASP:OD2	4:C:402:HOH:O	1.93	0.85
1:B:47:ARG:HG3	1:B:47:ARG:HH11	1.40	0.85
1:D:213:MET:HE3	4:D:457:HOH:O	1.77	0.84
1:C:119:LEU:O	1:C:123:LEU:HD23	1.76	0.84
1:D:114:GLU:CG	3:D:304:SO4:O1	2.25	0.83
1:D:164:GLU:C	1:D:165:LYS:HD3	2.03	0.83
1:A:47:ARG:HD3	4:A:408:HOH:O	1.79	0.81
1:C:87:MET:HE1	1:C:138:LEU:HD22	1.62	0.81
1:D:203:GLU:OE1	1:D:203:GLU:N	2.11	0.81
1:D:160:PRO:CB	1:D:165:LYS:HZ1	1.95	0.80
1:B:215:ARG:NH2	4:B:401:HOH:O	2.01	0.79
1:A:9:LEU:CD2	1:A:161:SER:CA	2.60	0.79
1:D:160:PRO:HG2	1:D:165:LYS:NZ	1.99	0.78
1:D:107:ASN:HB3	1:D:111:MET:CE	2.13	0.78
1:D:119:LEU:O	1:D:123:LEU:HD23	1.85	0.77
1:B:141:TYR:HE1	1:B:143:ALA:HB3	1.50	0.76
1:D:114:GLU:CG	3:D:304:SO4:S	2.72	0.76
1:B:141:TYR:CE1	1:B:143:ALA:HB3	2.22	0.75
1:D:107:ASN:HB2	1:D:111:MET:HE3	1.69	0.74
1:C:107:ASN:O	1:C:111:MET:HG2	1.87	0.73
1:C:81:THR:HG21	1:C:176:VAL:HG12	1.70	0.73
1:D:114:GLU:OE1	1:D:115:SER:N	2.22	0.72
1:D:114:GLU:HG2	3:D:304:SO4:O4	1.89	0.72
1:A:37:MET:HE1	1:A:210:LYS:HG2	1.71	0.72
1:C:20:LEU:CD1	1:C:100:LEU:HD21	2.20	0.72
1:C:21:LYS:O	1:C:22:GLN:C	2.32	0.71
1:A:146:VAL:HG12	3:A:302:SO4:O1	1.92	0.70
1:B:10:GLU:OE2	1:B:162:ILE:HG22	1.92	0.69

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:9:LEU:HD12	1:D:10:GLU:N	2.08	0.69
1:C:81:THR:HG23	1:C:84:VAL:HG23	1.74	0.68
1:A:9:LEU:HD23	1:A:161:SER:CA	2.18	0.68
1:A:206:ILE:O	1:A:210:LYS:HG3	1.94	0.68
1:D:81:THR:HG21	1:D:176:VAL:HG12	1.76	0.67
1:D:114:GLU:OE1	1:D:115:SER:CB	2.42	0.67
1:A:9:LEU:HD22	1:A:160:PRO:O	1.93	0.67
1:B:67:THR:O	1:B:71:GLU:HG3	1.95	0.67
1:A:120:LYS:O	1:A:124:GLU:HG2	1.95	0.67
1:A:132:GLU:OE1	4:A:403:HOH:O	2.13	0.66
1:D:21:LYS:CG	1:D:22:GLN:HB2	2.21	0.66
1:B:48:PRO:HD2	1:B:229:ALA:HB2	1.76	0.66
1:D:81:THR:HG23	1:D:84:VAL:HG23	1.78	0.66
1:A:213:MET:HE2	1:A:222:PHE:HB2	1.78	0.65
1:D:160:PRO:CG	1:D:165:LYS:HZ1	2.09	0.65
1:D:13:PRO:HG2	1:D:33:ASP:OD2	1.97	0.65
1:B:15:VAL:O	1:B:19:PHE:HB2	1.96	0.64
1:D:114:GLU:CG	3:D:304:SO4:O4	2.45	0.64
1:C:25:LEU:HD21	1:C:111:MET:CE	2.28	0.64
1:A:146:VAL:HG12	3:A:302:SO4:S	2.38	0.64
1:D:113:PHE:C	1:D:114:GLU:O	2.22	0.64
1:C:48:PRO:HD2	1:C:229:ALA:CB	2.29	0.63
1:D:160:PRO:CG	1:D:165:LYS:NZ	2.62	0.62
1:B:47:ARG:HG3	1:B:47:ARG:NH1	2.13	0.62
1:D:24:GLY:O	1:D:113:PHE:HA	2.00	0.62
1:D:26:HIS:N	1:D:112:HIS:O	2.28	0.61
1:C:9:LEU:HD11	1:C:159:ALA:O	2.00	0.61
1:B:135:ALA:O	1:B:139:GLU:HG3	2.00	0.60
1:C:23:LEU:HD13	1:C:119:LEU:HD22	1.81	0.60
1:C:48:PRO:HD2	1:C:229:ALA:HB2	1.82	0.60
1:A:115:SER:OG	3:A:305:SO4:O4	2.19	0.60
1:D:23:LEU:HD13	1:D:119:LEU:HD22	1.83	0.60
1:A:9:LEU:HD22	1:A:161:SER:N	2.17	0.59
1:D:59:THR:HG21	1:D:219:GLU:HG3	1.85	0.59
1:C:66:ARG:HG2	1:C:66:ARG:HH11	1.67	0.58
1:D:29:TRP:O	1:D:30:GLN:NE2	2.26	0.58
1:D:50:CYS:SG	1:D:111:MET:HE1	2.45	0.57
1:A:37:MET:CE	1:A:210:LYS:HG2	2.33	0.56
1:D:113:PHE:HB3	1:D:117:SER:CB	2.35	0.56
1:B:8:PRO:HA	1:B:160:PRO:O	2.04	0.56
1:C:81:THR:HG21	1:C:176:VAL:CG1	2.35	0.56

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:56:PHE:HE1	1:D:171:ILE:HG23	1.70	0.56
1:A:129:MET:HB3	1:A:133:GLU:HB2	1.88	0.55
1:A:9:LEU:HB2	1:A:160:PRO:O	2.07	0.55
1:B:48:PRO:HD2	1:B:229:ALA:CB	2.37	0.55
1:C:9:LEU:HD13	1:C:160:PRO:O	2.08	0.54
1:C:9:LEU:HD12	1:C:159:ALA:CB	2.37	0.54
1:D:107:ASN:O	1:D:111:MET:HB2	2.07	0.54
1:C:122:PHE:HD2	1:C:141:TYR:CD2	2.26	0.54
1:C:31:PHE:HA	1:C:226:ALA:O	2.07	0.54
1:D:160:PRO:HG2	1:D:165:LYS:HZ3	1.72	0.54
1:B:12:ASN:O	1:B:16:THR:HG23	2.07	0.54
1:C:97:THR:OG1	1:C:146:VAL:HA	2.07	0.54
1:C:116:GLY:HA2	1:C:121:LYS:HE3	1.88	0.54
1:C:67:THR:O	1:C:71:GLU:HG3	2.08	0.54
1:B:144:ILE:HG22	1:B:145:ARG:N	2.13	0.53
1:D:122:PHE:HD1	1:D:141:TYR:HD1	1.56	0.53
1:D:171:ILE:HD12	1:D:182:GLU:HG3	1.89	0.53
1:C:25:LEU:HD21	1:C:111:MET:HE3	1.89	0.53
1:A:207:GLU:OE1	1:A:210:LYS:HD2	2.09	0.53
1:B:38:ASP:OD1	1:B:39:PRO:HD2	2.09	0.53
1:B:87:MET:HE1	1:B:138:LEU:HD22	1.91	0.52
1:C:167:ASP:OD2	1:C:167:ASP:N	2.38	0.52
1:C:167:ASP:OD1	1:C:221:ARG:NH2	2.39	0.52
1:C:105:ALA:HB2	1:C:123:LEU:HD11	1.92	0.52
1:C:102:HIS:CD2	1:C:183:LEU:HD13	2.45	0.52
1:D:8:PRO:HA	1:D:160:PRO:O	2.10	0.52
1:C:171:ILE:HD12	1:C:182:GLU:HG3	1.92	0.51
1:B:66:ARG:HG3	1:B:187:LYS:HE2	1.92	0.51
1:C:102:HIS:HB3	1:C:183:LEU:HD12	1.92	0.51
1:D:113:PHE:O	1:D:114:GLU:C	2.42	0.51
1:C:25:LEU:HD11	1:C:111:MET:HE2	1.93	0.50
1:C:25:LEU:HD21	1:C:111:MET:HE2	1.91	0.50
1:A:88:LYS:HG3	4:B:427:HOH:O	2.10	0.50
1:A:7:LEU:HD22	1:A:11:ALA:HB3	1.93	0.50
1:B:213:MET:HE3	1:B:222:PHE:HB2	1.92	0.50
1:B:81:THR:CG2	1:B:84:VAL:HG23	2.40	0.50
1:C:37:MET:SD	1:C:213:MET:HE1	2.52	0.50
1:D:122:PHE:HD1	1:D:141:TYR:CD1	2.30	0.49
1:C:66:ARG:HG2	1:C:66:ARG:NH1	2.26	0.49
1:D:114:GLU:CB	3:D:304:SO4:S	3.00	0.49
1:C:182:GLU:HB3	1:C:191:ILE:HB	1.94	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:20:LEU:HD22	1:B:25:LEU:HD22	1.94	0.49
1:B:213:MET:HE2	4:B:466:HOH:O	2.12	0.49
1:D:25:LEU:HD21	1:D:113:PHE:CE2	2.48	0.49
1:D:121:LYS:O	1:D:125:GLU:HG2	2.12	0.49
1:B:47:ARG:NH2	1:B:202:LEU:HD23	2.28	0.49
1:D:164:GLU:O	1:D:165:LYS:HD3	2.13	0.49
1:A:88:LYS:HE2	1:A:188:PRO:HA	1.95	0.49
1:D:105:ALA:HB2	1:D:123:LEU:HD11	1.94	0.49
1:A:8:PRO:HG3	1:A:162:ILE:HD12	1.94	0.48
1:B:25:LEU:CD1	1:B:113:PHE:CE1	2.96	0.48
1:D:165:LYS:HD3	1:D:165:LYS:N	2.28	0.48
1:A:213:MET:CE	1:A:222:PHE:HB2	2.42	0.48
1:C:25:LEU:CD2	1:C:111:MET:HE3	2.43	0.48
1:C:126:SER:HA	1:C:129:MET:HG3	1.96	0.47
1:D:203:GLU:H	1:D:203:GLU:CD	2.11	0.47
1:C:6:TRP:CZ2	1:C:7:LEU:HD13	2.49	0.47
1:C:119:LEU:HD12	1:C:123:LEU:CD2	2.45	0.47
1:C:8:PRO:HA	1:C:160:PRO:O	2.15	0.47
1:C:9:LEU:HD13	1:C:160:PRO:C	2.39	0.47
1:B:31:PHE:HA	1:B:226:ALA:O	2.15	0.47
1:B:70:GLU:HG2	1:B:74:LYS:HD2	1.97	0.47
1:B:8:PRO:HG3	1:B:162:ILE:HD12	1.96	0.46
1:B:17:ASN:C	1:B:19:PHE:H	2.22	0.46
1:C:81:THR:CG2	1:C:176:VAL:HG12	2.43	0.46
1:C:84:VAL:HG22	1:C:176:VAL:HG11	1.96	0.46
1:D:160:PRO:HB2	1:D:164:GLU:OE2	2.15	0.46
1:B:220:LEU:HB2	1:C:220:LEU:HB2	1.97	0.46
1:A:9:LEU:CD2	1:A:161:SER:N	2.79	0.46
1:D:114:GLU:HB3	3:D:304:SO4:S	2.55	0.46
1:B:37:MET:SD	1:B:210:LYS:HG2	2.56	0.46
1:D:113:PHE:CG	1:D:120:LYS:HB2	2.51	0.46
1:C:124:GLU:O	1:C:127:VAL:HG12	2.16	0.46
1:C:210:LYS:HA	1:C:213:MET:HE3	1.96	0.46
1:D:196:THR:OG1	1:D:204:ASP:OD2	2.24	0.46
1:D:160:PRO:CG	1:D:165:LYS:CE	2.94	0.45
1:B:162:ILE:HG12	2:B:301:A1DFD:C03	2.46	0.45
1:B:213:MET:HE3	1:B:222:PHE:CB	2.47	0.45
1:C:161:SER:OG	1:C:163:ASP:HB2	2.16	0.45
1:D:88:LYS:HB3	1:D:88:LYS:HE3	1.58	0.45
1:D:114:GLU:OE1	1:D:115:SER:HB3	2.15	0.45
1:D:114:GLU:OE1	1:D:115:SER:CA	2.65	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:145:ARG:O	1:B:146:VAL:C	2.59	0.45
1:C:106:ASN:ND2	1:C:183:LEU:HD11	2.31	0.45
1:B:25:LEU:HD12	1:B:113:PHE:CE1	2.52	0.45
1:A:56:PHE:HE1	1:A:171:ILE:HG23	1.82	0.44
1:D:122:PHE:HB2	1:D:141:TYR:CE1	2.53	0.44
1:B:81:THR:HG23	1:B:84:VAL:HG23	1.99	0.44
1:C:87:MET:CE	1:C:138:LEU:HD22	2.38	0.44
1:D:160:PRO:HG2	1:D:165:LYS:HZ1	1.69	0.44
1:B:132:GLU:O	1:B:136:ARG:HG3	2.17	0.44
1:C:135:ALA:O	1:C:139:GLU:HG3	2.17	0.44
1:B:13:PRO:HG3	1:B:225:ILE:CG2	2.48	0.44
1:A:125:GLU:OE1	1:A:137:TYR:OH	2.31	0.44
1:A:37:MET:HE1	1:A:210:LYS:CG	2.44	0.44
1:A:160:PRO:HG2	1:A:165:LYS:HE2	1.99	0.44
1:B:20:LEU:HD21	1:B:104:ILE:HD11	2.00	0.44
1:B:163:ASP:OD1	1:B:164:GLU:HG3	2.18	0.44
1:D:67:THR:HG23	4:D:404:HOH:O	2.18	0.44
1:D:123:LEU:N	1:D:123:LEU:HD22	2.32	0.44
1:B:171:ILE:HG22	1:B:184:ASP:HB2	1.98	0.44
1:A:9:LEU:CD1	1:A:159:ALA:HB3	2.48	0.44
1:B:100:LEU:O	1:B:104:ILE:HG12	2.18	0.43
1:C:69:GLU:O	1:C:73:ILE:HG13	2.18	0.43
1:A:100:LEU:HD23	1:A:100:LEU:HA	1.73	0.43
1:C:20:LEU:HD11	1:C:100:LEU:HD21	1.98	0.43
1:D:90:THR:OG1	1:D:139:GLU:OE2	2.28	0.43
1:A:159:ALA:HB1	1:A:160:PRO:CD	2.48	0.43
1:C:81:THR:CG2	1:C:176:VAL:CG1	2.96	0.43
1:D:13:PRO:CG	1:D:33:ASP:OD2	2.67	0.43
1:B:59:THR:HG21	1:B:219:GLU:HG3	2.00	0.42
1:C:25:LEU:CD2	1:C:111:MET:CE	2.98	0.42
1:C:9:LEU:HD12	1:C:159:ALA:HB3	2.01	0.42
1:D:10:GLU:OE1	1:D:162:ILE:HB	2.20	0.42
1:B:16:THR:O	1:B:19:PHE:CB	2.68	0.41
1:C:9:LEU:HD12	1:C:159:ALA:HB1	2.02	0.41
1:C:210:LYS:O	1:C:214:GLU:HG3	2.20	0.41
1:C:211:LYS:O	1:C:215:ARG:HG3	2.20	0.41
1:A:41:LEU:O	1:A:44:MET:HB2	2.20	0.41
1:C:12:ASN:OD1	1:C:14:GLU:N	2.47	0.41
1:D:20:LEU:HD23	1:D:20:LEU:HA	1.82	0.41
1:C:175:HIS:CD2	1:C:196:THR:HG23	2.56	0.41
1:D:135:ALA:O	1:D:139:GLU:HG3	2.20	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:14:GLU:O	1:A:18:GLN:HG2	2.21	0.41
1:C:60:GLU:O	1:C:64:VAL:HG23	2.21	0.41
1:D:56:PHE:CE1	1:D:171:ILE:HG23	2.54	0.41
1:A:159:ALA:HB1	1:A:160:PRO:HD2	2.02	0.41
1:B:85:TYR:CD1	1:B:85:TYR:C	2.99	0.40
1:B:100:LEU:HD23	1:B:100:LEU:HA	1.88	0.40
1:C:81:THR:CG2	1:C:84:VAL:HG23	2.47	0.40
1:C:121:LYS:HA	1:C:124:GLU:HG2	2.03	0.40
1:C:187:LYS:HB3	1:C:188:PRO:HD2	2.04	0.40
1:A:64:VAL:O	1:A:68:GLU:HG3	2.22	0.40
1:A:162:ILE:O	1:A:162:ILE:HG13	2.20	0.40
1:B:17:ASN:C	1:B:19:PHE:N	2.78	0.40
1:B:41:LEU:O	1:B:44:MET:HG2	2.22	0.40
1:B:88:LYS:HB3	1:B:88:LYS:HE3	1.94	0.40
1:B:202:LEU:O	1:B:206:ILE:HG12	2.21	0.40
1:C:47:ARG:HB3	1:C:48:PRO:HA	2.03	0.40
1:D:11:ALA:HB2	1:D:55:LEU:HD22	2.02	0.40
1:D:114:GLU:CD	1:D:115:SER:H	2.26	0.40
1:D:102:HIS:HB3	1:D:183:LEU:CD1	2.52	0.40

There are no symmetry-related clashes.

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	216/235 (92%)	212 (98%)	4 (2%)	0	100	100
1	B	212/235 (90%)	206 (97%)	6 (3%)	0	100	100
1	C	212/235 (90%)	208 (98%)	3 (1%)	1 (0%)	24	15
1	D	209/235 (89%)	202 (97%)	6 (3%)	1 (0%)	24	15
All	All	849/940 (90%)	828 (98%)	19 (2%)	2 (0%)	43	37

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	146	VAL
1	D	145	ARG

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	185/207 (89%)	185 (100%)	0	100	100
1	B	178/207 (86%)	178 (100%)	0	100	100
1	C	180/207 (87%)	175 (97%)	5 (3%)	38	25
1	D	185/207 (89%)	181 (98%)	4 (2%)	45	35
All	All	728/828 (88%)	719 (99%)	9 (1%)	63	57

All (9) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C	25	LEU
1	C	37	MET
1	C	41	LEU
1	C	75	SER
1	C	165	LYS
1	D	81	THR
1	D	110	LYS
1	D	144	ILE
1	D	206	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	179	HIS
1	B	140	ASN
1	C	28	ASN
1	D	140	ASN

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 ⓘ

14 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	$\# Z > 2$
3	SO4	B	302	-	4,4,4	0.27	0	6,6,6	0.11	0
3	SO4	D	303	-	4,4,4	0.26	0	6,6,6	0.16	0
3	SO4	A	304	-	4,4,4	0.35	0	6,6,6	0.19	0
2	A1DFD	C	301	1	20,20,21	2.12	8 (40%)	26,26,27	1.07	3 (11%)
3	SO4	C	302	-	4,4,4	0.39	0	6,6,6	0.35	0
2	A1DFD	B	301	1	20,20,21	2.23	7 (35%)	26,26,27	1.47	6 (23%)
3	SO4	B	303	-	4,4,4	0.24	0	6,6,6	0.13	0
3	SO4	A	302	-	4,4,4	0.24	0	6,6,6	0.31	0
3	SO4	D	304	-	4,4,4	0.49	0	6,6,6	1.09	0
3	SO4	A	303	-	4,4,4	0.27	0	6,6,6	0.29	0
2	A1DFD	D	301	1	20,20,21	2.01	8 (40%)	26,26,27	1.08	2 (7%)
2	A1DFD	A	301	1	20,20,21	1.64	5 (25%)	26,26,27	1.12	3 (11%)
3	SO4	A	305	-	4,4,4	0.28	0	6,6,6	0.17	0
3	SO4	D	302	-	4,4,4	0.22	0	6,6,6	0.25	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	A1DFD	B	301	1	-	0/12/12/14	0/2/2/2
2	A1DFD	D	301	1	-	0/12/12/14	0/2/2/2
2	A1DFD	A	301	1	-	0/12/12/14	0/2/2/2
2	A1DFD	C	301	1	-	3/12/12/14	0/2/2/2

All (28) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	301	A1DFD	C02-N05	5.31	1.46	1.36
2	B	301	A1DFD	C11-N10	4.49	1.50	1.40
2	C	301	A1DFD	C02-N05	4.44	1.44	1.36
2	C	301	A1DFD	C11-N16	-4.16	1.26	1.34
2	D	301	A1DFD	C02-N05	3.99	1.43	1.36
2	B	301	A1DFD	C09-N10	3.92	1.47	1.35
2	D	301	A1DFD	C11-N10	3.91	1.49	1.40
2	C	301	A1DFD	C11-N10	3.35	1.48	1.40
2	D	301	A1DFD	C09-N10	3.34	1.45	1.35
2	A	301	A1DFD	C02-N05	3.33	1.42	1.36
2	C	301	A1DFD	O17-C09	-3.16	1.16	1.23
2	B	301	A1DFD	C11-N16	-3.09	1.28	1.34
2	A	301	A1DFD	C09-N10	3.07	1.44	1.35
2	A	301	A1DFD	C11-N16	-3.03	1.28	1.34
2	C	301	A1DFD	C09-N10	2.94	1.44	1.35
2	D	301	A1DFD	C11-N16	-2.92	1.28	1.34
2	A	301	A1DFD	C11-N10	2.86	1.46	1.40
2	D	301	A1DFD	C03-C02	2.73	1.56	1.50
2	C	301	A1DFD	C08-C09	2.70	1.56	1.50
2	D	301	A1DFD	C06-N05	2.52	1.46	1.41
2	B	301	A1DFD	C03-C02	2.51	1.55	1.50
2	C	301	A1DFD	C06-N05	2.40	1.46	1.41
2	B	301	A1DFD	C06-N05	2.40	1.46	1.41
2	A	301	A1DFD	C03-C02	2.30	1.55	1.50
2	D	301	A1DFD	O17-C09	-2.18	1.18	1.23
2	C	301	A1DFD	C03-C02	2.13	1.55	1.50
2	D	301	A1DFD	C08-C09	2.07	1.54	1.50
2	B	301	A1DFD	O01-C02	-2.00	1.18	1.23

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	301	A1DFD	C15-N16-C11	2.93	121.39	117.21
2	D	301	A1DFD	C18-C08-C07	2.65	122.32	119.25
2	B	301	A1DFD	C19-C20-C06	2.61	122.74	119.73
2	A	301	A1DFD	C18-C08-C07	2.52	122.17	119.25
2	B	301	A1DFD	C18-C08-C07	2.32	121.94	119.25
2	C	301	A1DFD	C14-C13-C12	-2.30	117.41	120.24
2	B	301	A1DFD	C19-C18-C08	-2.23	118.17	120.36
2	C	301	A1DFD	C06-N05-C02	-2.22	123.84	127.98
2	D	301	A1DFD	C15-N16-C11	2.15	120.28	117.21
2	C	301	A1DFD	C11-N10-C09	-2.12	122.24	128.21
2	A	301	A1DFD	C08-C07-C06	-2.11	117.71	120.44
2	A	301	A1DFD	C14-C13-C12	-2.07	117.69	120.24
2	B	301	A1DFD	C11-N10-C09	-2.06	122.41	128.21
2	B	301	A1DFD	C03-C02-N05	2.02	118.00	114.95

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	C	301	A1DFD	C18-C08-C09-O17
2	C	301	A1DFD	C18-C08-C09-N10
2	C	301	A1DFD	C07-C08-C09-O17

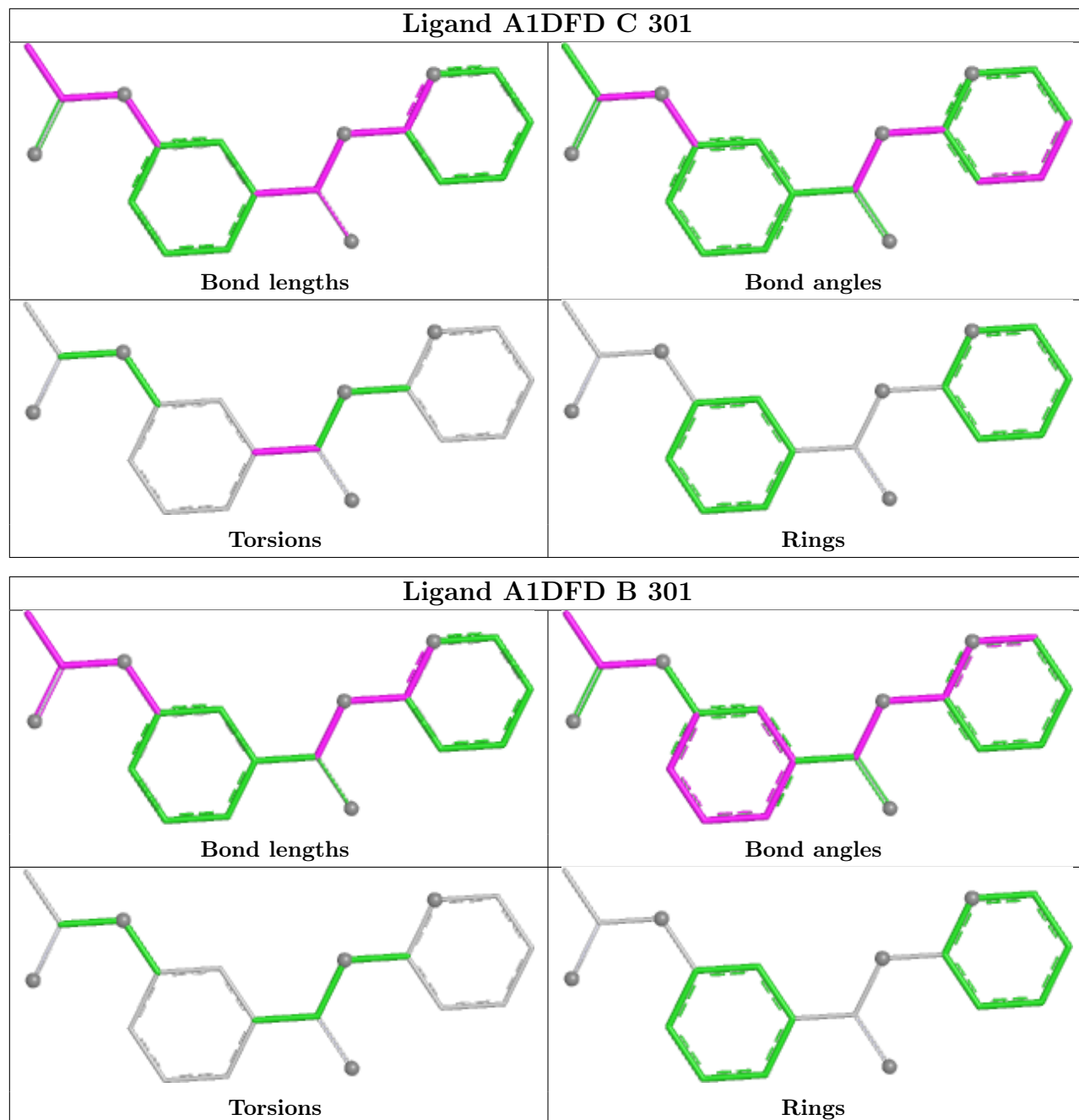
There are no ring outliers.

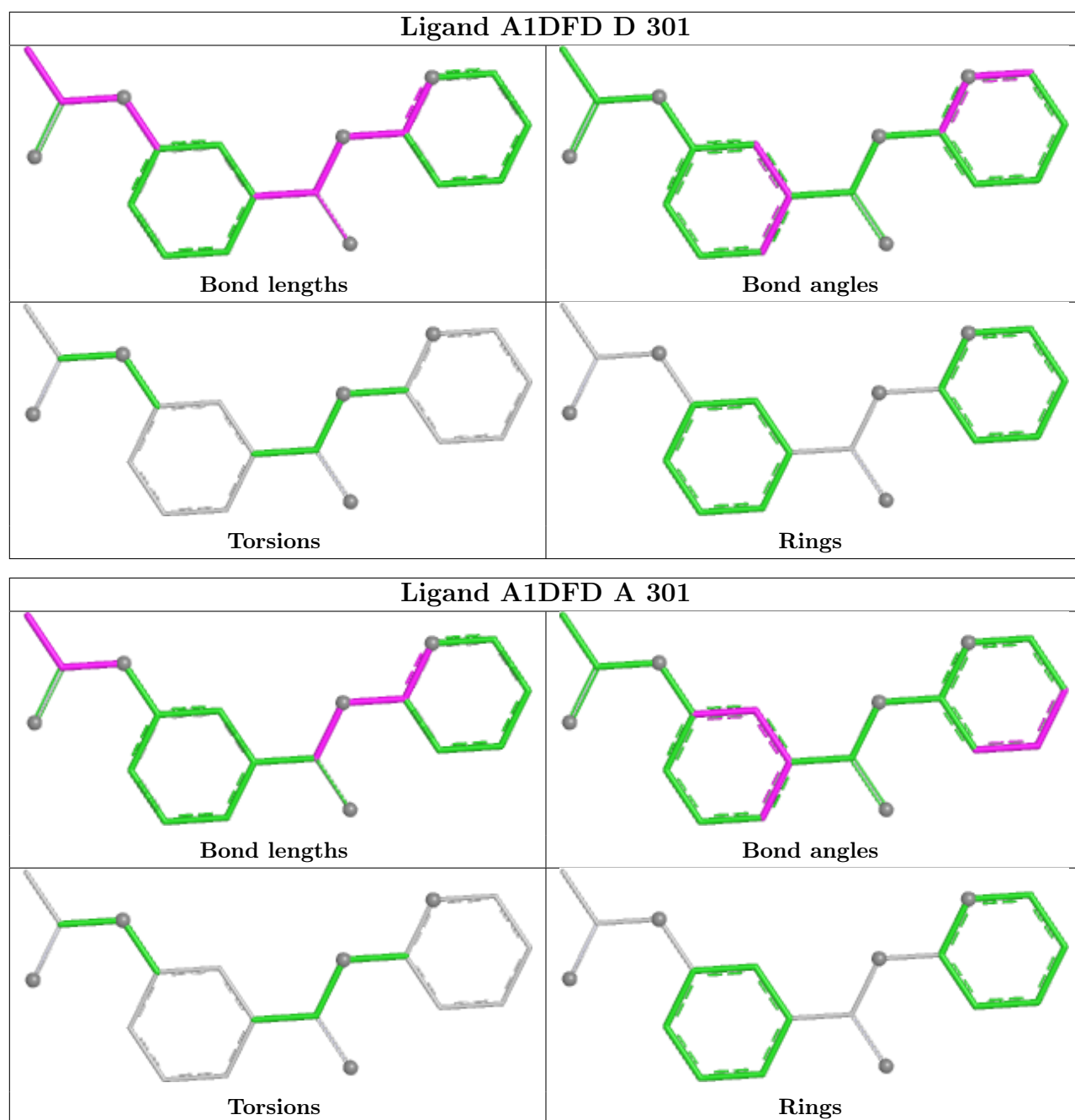
4 monomers are involved in 12 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	301	A1DFD	1	0
3	A	302	SO4	2	0
3	D	304	SO4	8	0
3	A	305	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 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 [i](#)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q< 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	218/235 (92%)	0.20	2 (0%) 81 85	21, 39, 60, 88	3 (1%)
1	B	215/235 (91%)	0.40	10 (4%) 36 41	24, 44, 74, 105	3 (1%)
1	C	215/235 (91%)	0.55	12 (5%) 30 33	23, 54, 81, 107	2 (0%)
1	D	215/235 (91%)	0.55	19 (8%) 15 17	33, 54, 84, 136	2 (0%)
All	All	863/940 (91%)	0.43	43 (4%) 34 38	21, 47, 79, 136	10 (1%)

All (43) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	9	LEU	5.1
1	B	19	PHE	4.4
1	C	147	THR	4.2
1	D	147	THR	3.7
1	D	146	VAL	3.3
1	B	230	ALA	3.3
1	C	5	ARG	3.1
1	A	148	HIS	3.1
1	C	143	ALA	3.0
1	D	109	ASP	3.0
1	D	23	LEU	2.8
1	B	143	ALA	2.8
1	D	37	MET	2.7
1	C	146	VAL	2.6
1	D	5	ARG	2.6
1	C	22	GLN	2.5
1	B	160	PRO	2.5
1	D	114	GLU	2.5
1	C	230	ALA	2.5
1	C	65	PHE	2.4
1	B	115	SER	2.4

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	D	165	LYS	2.4
1	B	146	VAL	2.4
1	C	116	GLY	2.4
1	D	28	ASN	2.4
1	D	113	PHE	2.3
1	B	159	ALA	2.3
1	B	116	GLY	2.3
1	D	25	LEU	2.2
1	D	22	GLN	2.2
1	D	65	PHE	2.2
1	C	163	ASP	2.2
1	B	141	TYR	2.1
1	C	141	TYR	2.1
1	D	144	ILE	2.1
1	D	112	HIS	2.1
1	B	145	ARG	2.1
1	D	111	MET	2.1
1	D	19	PHE	2.0
1	D	115	SER	2.0
1	D	32	VAL	2.0
1	C	145	ARG	2.0
1	C	77	GLY	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 oligosaccharides in this entry.

6.4 Ligands [i](#)

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
3	SO4	D	303	5/5	0.56	0.10	98,100,117,121	0

Continued on next page...

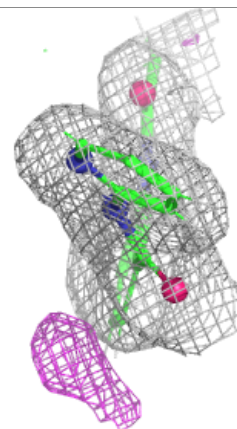
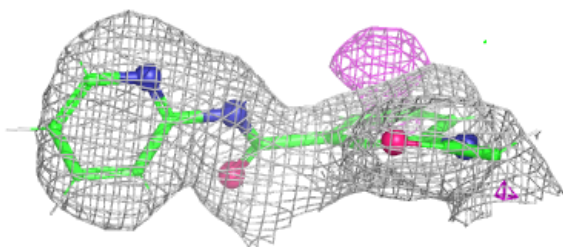
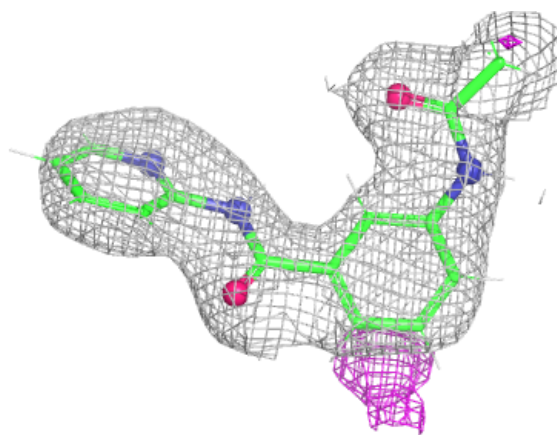
Continued from previous page...

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
3	SO4	B	303	5/5	0.64	0.09	104,115,122,123	0
3	SO4	D	304	5/5	0.67	0.09	119,121,127,128	0
3	SO4	A	302	5/5	0.69	0.10	71,72,83,86	0
3	SO4	D	302	5/5	0.70	0.08	86,93,108,117	0
3	SO4	A	303	5/5	0.73	0.09	71,71,92,94	0
3	SO4	C	302	5/5	0.78	0.10	60,69,83,96	0
3	SO4	A	305	5/5	0.79	0.08	77,78,100,102	0
3	SO4	B	302	5/5	0.80	0.07	62,74,98,101	0
3	SO4	A	304	5/5	0.80	0.08	68,73,107,110	0
2	A1DFD	C	301	19/20	0.92	0.08	36,43,53,58	0
2	A1DFD	B	301	19/20	0.93	0.07	32,37,46,48	0
2	A1DFD	D	301	19/20	0.93	0.07	37,43,53,54	0
2	A1DFD	A	301	19/20	0.96	0.06	30,36,44,49	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.

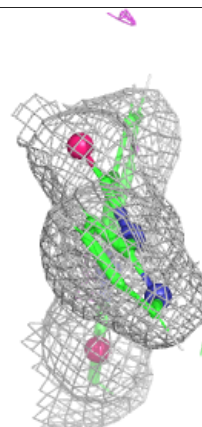
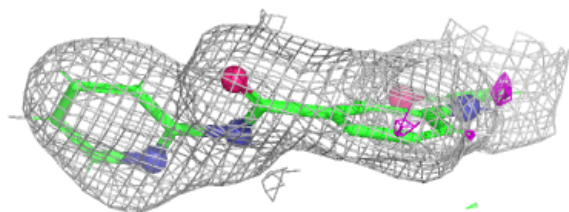
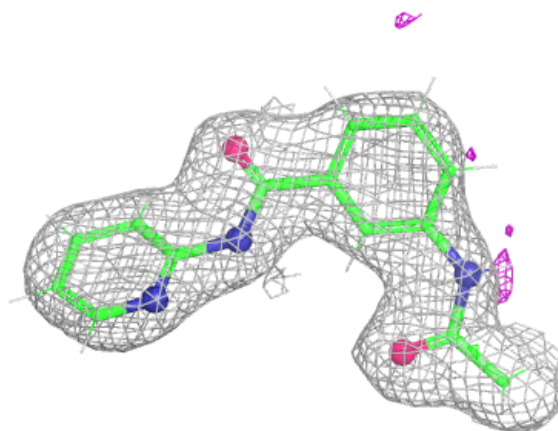
Electron density around A1DFD C 301:

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

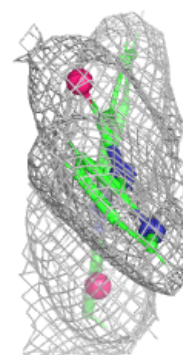
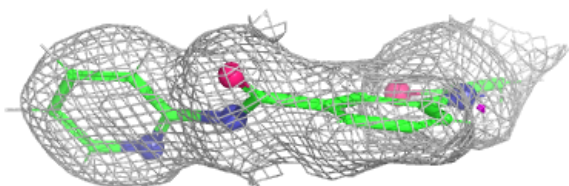
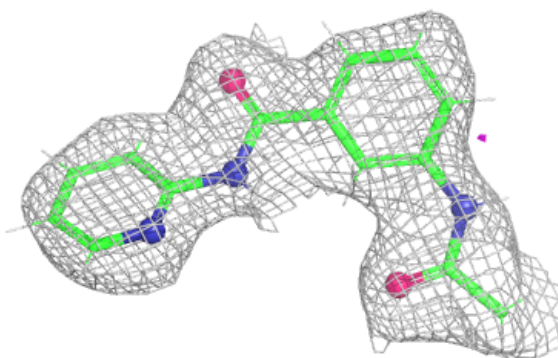


Electron density around A1DFD B 301:

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

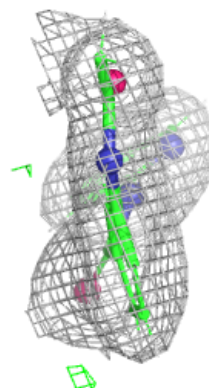
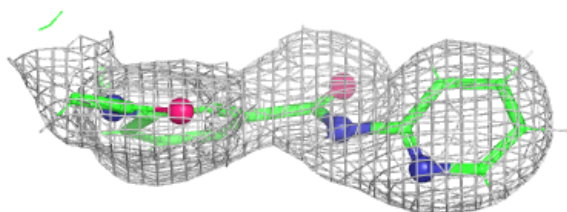
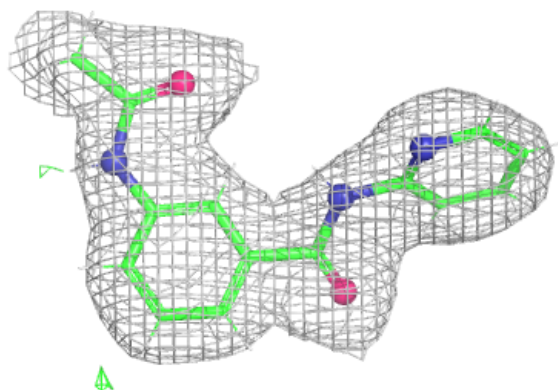
**Electron density around A1DFD D 301:**

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



Electron density around A1DFD A 301:

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



6.5 Other polymers ⓘ

There are no such residues in this entry.