



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 6, 2026 – 07:12 PM UTC

PDB ID : 5JJQ / pdb_00005jjq
Title : Crystal structure of IdnL1
Authors : Cieslak, J.; Miyanaga, A.; Kudo, F.; Eguchi, T.
Deposited on : 2016-04-25
Resolution : 2.60 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 : 9.0.010 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

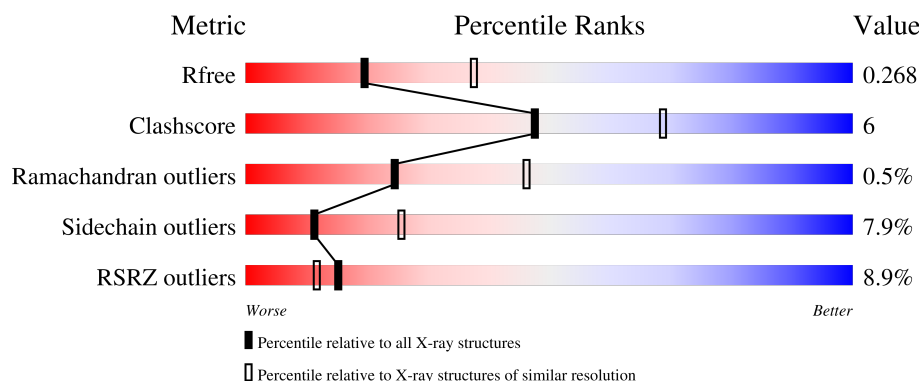
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.60 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	4008 (2.60-2.60)
Clashscore	190562	4347 (2.60-2.60)
Ramachandran outliers	187476	4277 (2.60-2.60)
Sidechain outliers	187428	4277 (2.60-2.60)
RSRZ outliers	180081	4008 (2.60-2.60)

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	552	 6% 71% 15% • 12%
1	B	552	 9% 71% 15% • 12%
1	C	552	 6% 72% 14% • 11%
1	D	552	 10% 70% 17% • 12%

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 15125 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called AMP-dependent synthetase and ligase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	488	Total	C	N	O	S	0	1	0
			3685	2335	655	684	11			
1	B	487	Total	C	N	O	S	0	1	0
			3685	2339	654	681	11			
1	C	489	Total	C	N	O	S	0	1	0
			3697	2341	659	686	11			
1	D	487	Total	C	N	O	S	0	1	0
			3691	2340	657	683	11			

There are 80 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-19	MET	-	initiating methionine	UNP A0A077KT11
A	-18	GLY	-	expression tag	UNP A0A077KT11
A	-17	SER	-	expression tag	UNP A0A077KT11
A	-16	SER	-	expression tag	UNP A0A077KT11
A	-15	HIS	-	expression tag	UNP A0A077KT11
A	-14	HIS	-	expression tag	UNP A0A077KT11
A	-13	HIS	-	expression tag	UNP A0A077KT11
A	-12	HIS	-	expression tag	UNP A0A077KT11
A	-11	HIS	-	expression tag	UNP A0A077KT11
A	-10	HIS	-	expression tag	UNP A0A077KT11
A	-9	SER	-	expression tag	UNP A0A077KT11
A	-8	SER	-	expression tag	UNP A0A077KT11
A	-7	GLY	-	expression tag	UNP A0A077KT11
A	-6	LEU	-	expression tag	UNP A0A077KT11
A	-5	VAL	-	expression tag	UNP A0A077KT11
A	-4	PRO	-	expression tag	UNP A0A077KT11
A	-3	ARG	-	expression tag	UNP A0A077KT11
A	-2	GLY	-	expression tag	UNP A0A077KT11
A	-1	SER	-	expression tag	UNP A0A077KT11
A	0	HIS	-	expression tag	UNP A0A077KT11
B	-19	MET	-	initiating methionine	UNP A0A077KT11

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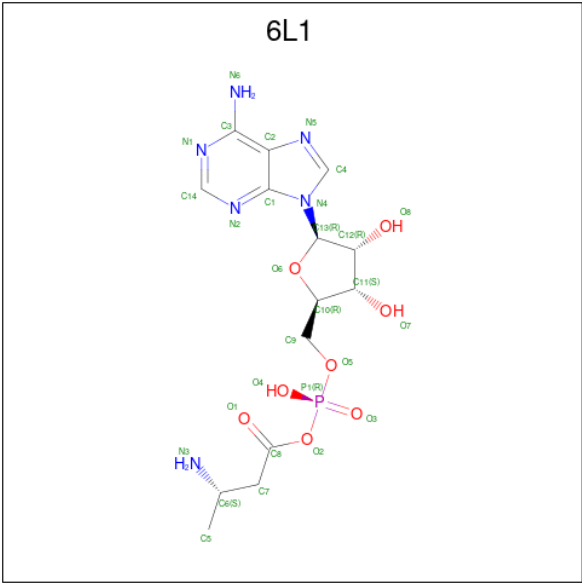
Chain	Residue	Modelled	Actual	Comment	Reference
B	-18	GLY	-	expression tag	UNP A0A077KT11
B	-17	SER	-	expression tag	UNP A0A077KT11
B	-16	SER	-	expression tag	UNP A0A077KT11
B	-15	HIS	-	expression tag	UNP A0A077KT11
B	-14	HIS	-	expression tag	UNP A0A077KT11
B	-13	HIS	-	expression tag	UNP A0A077KT11
B	-12	HIS	-	expression tag	UNP A0A077KT11
B	-11	HIS	-	expression tag	UNP A0A077KT11
B	-10	HIS	-	expression tag	UNP A0A077KT11
B	-9	SER	-	expression tag	UNP A0A077KT11
B	-8	SER	-	expression tag	UNP A0A077KT11
B	-7	GLY	-	expression tag	UNP A0A077KT11
B	-6	LEU	-	expression tag	UNP A0A077KT11
B	-5	VAL	-	expression tag	UNP A0A077KT11
B	-4	PRO	-	expression tag	UNP A0A077KT11
B	-3	ARG	-	expression tag	UNP A0A077KT11
B	-2	GLY	-	expression tag	UNP A0A077KT11
B	-1	SER	-	expression tag	UNP A0A077KT11
B	0	HIS	-	expression tag	UNP A0A077KT11
C	-19	MET	-	initiating methionine	UNP A0A077KT11
C	-18	GLY	-	expression tag	UNP A0A077KT11
C	-17	SER	-	expression tag	UNP A0A077KT11
C	-16	SER	-	expression tag	UNP A0A077KT11
C	-15	HIS	-	expression tag	UNP A0A077KT11
C	-14	HIS	-	expression tag	UNP A0A077KT11
C	-13	HIS	-	expression tag	UNP A0A077KT11
C	-12	HIS	-	expression tag	UNP A0A077KT11
C	-11	HIS	-	expression tag	UNP A0A077KT11
C	-10	HIS	-	expression tag	UNP A0A077KT11
C	-9	SER	-	expression tag	UNP A0A077KT11
C	-8	SER	-	expression tag	UNP A0A077KT11
C	-7	GLY	-	expression tag	UNP A0A077KT11
C	-6	LEU	-	expression tag	UNP A0A077KT11
C	-5	VAL	-	expression tag	UNP A0A077KT11
C	-4	PRO	-	expression tag	UNP A0A077KT11
C	-3	ARG	-	expression tag	UNP A0A077KT11
C	-2	GLY	-	expression tag	UNP A0A077KT11
C	-1	SER	-	expression tag	UNP A0A077KT11
C	0	HIS	-	expression tag	UNP A0A077KT11
D	-19	MET	-	initiating methionine	UNP A0A077KT11
D	-18	GLY	-	expression tag	UNP A0A077KT11
D	-17	SER	-	expression tag	UNP A0A077KT11

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Chain	Residue	Modelled	Actual	Comment	Reference
D	-16	SER	-	expression tag	UNP A0A077KT11
D	-15	HIS	-	expression tag	UNP A0A077KT11
D	-14	HIS	-	expression tag	UNP A0A077KT11
D	-13	HIS	-	expression tag	UNP A0A077KT11
D	-12	HIS	-	expression tag	UNP A0A077KT11
D	-11	HIS	-	expression tag	UNP A0A077KT11
D	-10	HIS	-	expression tag	UNP A0A077KT11
D	-9	SER	-	expression tag	UNP A0A077KT11
D	-8	SER	-	expression tag	UNP A0A077KT11
D	-7	GLY	-	expression tag	UNP A0A077KT11
D	-6	LEU	-	expression tag	UNP A0A077KT11
D	-5	VAL	-	expression tag	UNP A0A077KT11
D	-4	PRO	-	expression tag	UNP A0A077KT11
D	-3	ARG	-	expression tag	UNP A0A077KT11
D	-2	GLY	-	expression tag	UNP A0A077KT11
D	-1	SER	-	expression tag	UNP A0A077KT11
D	0	HIS	-	expression tag	UNP A0A077KT11

- Molecule 2 is 5'-O-[(R)-{[(3S)-3-aminobutanoyl]oxy}(hydroxy)phosphoryl]adenosine (CCD ID: 6L1) (formula: C₁₄H₂₁N₆O₈P).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	P	0	0
			29	14	6	8	1		
2	B	1	Total	C	N	O	P	0	0
			29	14	6	8	1		

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	C	1	Total	C	N	O	P	0	0
			29	14	6	8	1		
2	D	1	Total	C	N	O	P	0	0
			29	14	6	8	1		

- Molecule 3 is CHLORIDE ION (CCD ID: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	1	Total	Cl	0	0
			1	1		
3	B	1	Total	Cl	0	0
			1	1		
3	C	1	Total	Cl	0	0
			1	1		
3	D	1	Total	Cl	0	0
			1	1		

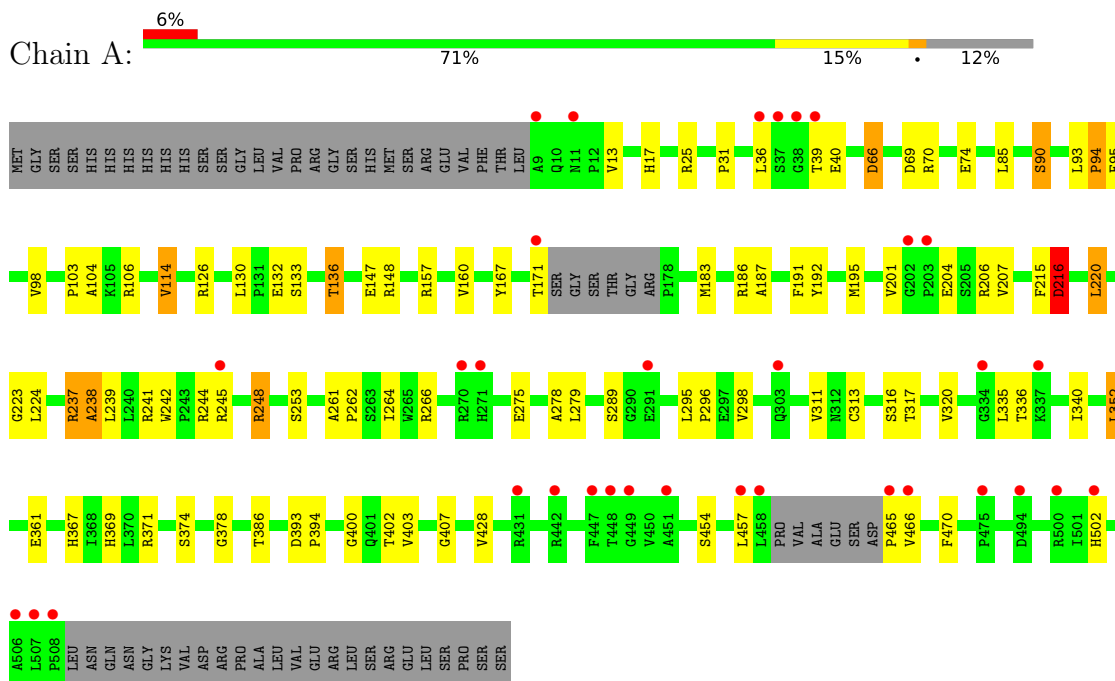
- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	60	Total	O	0	0
			60	60		
4	B	58	Total	O	0	0
			58	58		
4	C	69	Total	O	0	0
			69	69		
4	D	60	Total	O	0	0
			60	60		

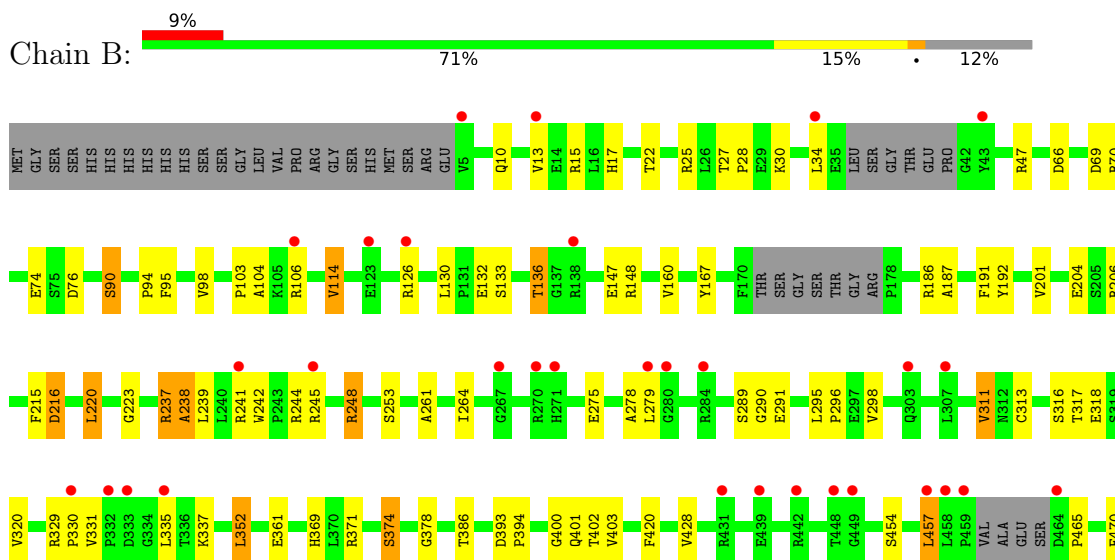
3 Residue-property plots [i](#)

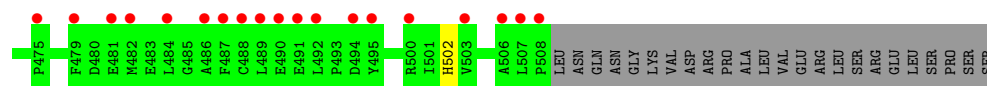
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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: AMP-dependent synthetase and ligase

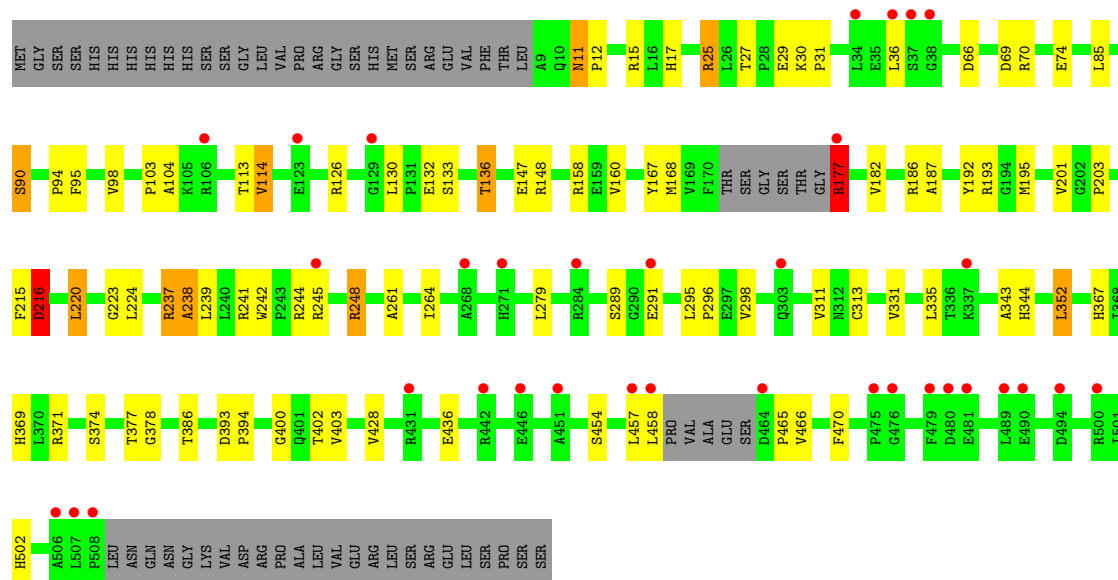
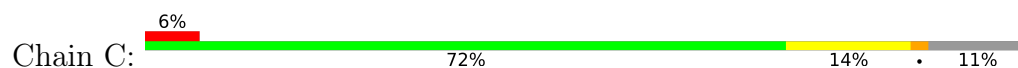


- Molecule 1: AMP-dependent synthetase and ligase

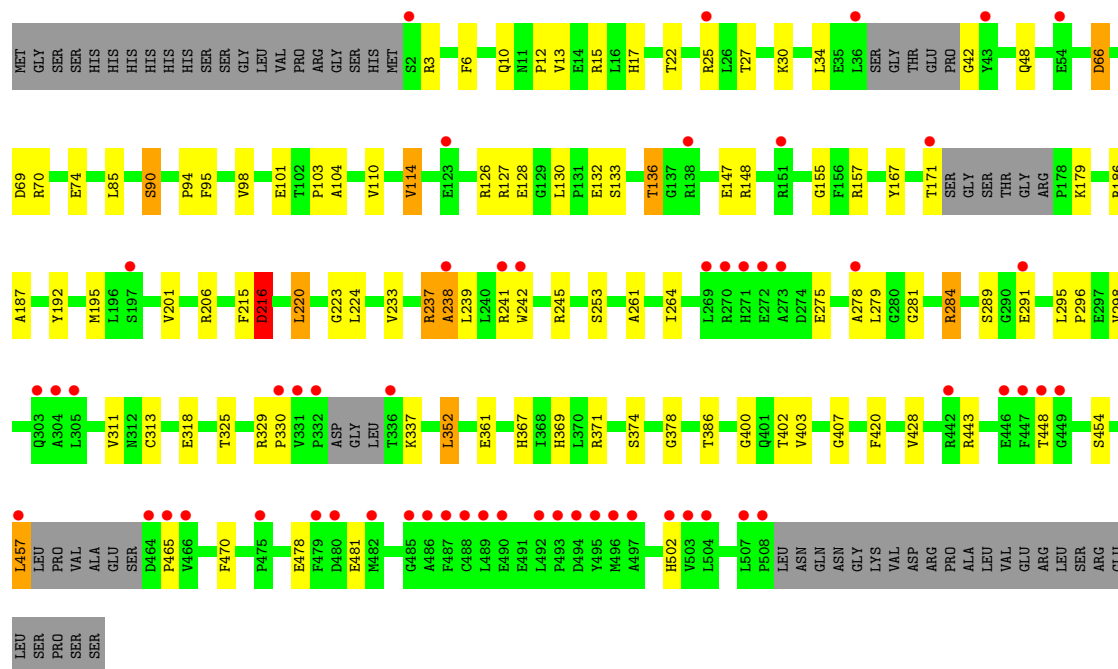




• Molecule 1: AMP-dependent synthetase and ligase



• Molecule 1: AMP-dependent synthetase and ligase



4 Data and refinement statistics

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α , β , γ	65.75Å 104.45Å 120.00Å 81.78° 83.01° 81.98°	Depositor
Resolution (Å)	59.51 – 2.60 59.51 – 2.60	Depositor EDS
% Data completeness (in resolution range)	94.1 (59.51-2.60) 94.1 (59.51-2.60)	Depositor EDS
R_{merge}	0.08	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.30 (at 2.61Å)	Xtriage
Refinement program	REFMAC 5.7.0029	Depositor
R, R_{free}	0.234 , 0.265 0.237 , 0.268	Depositor DCC
R_{free} test set	4516 reflections (4.72%)	wwPDB-VP
Wilson B-factor (Å ²)	38.3	Xtriage
Anisotropy	0.256	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 43.3	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	0.90	EDS
Total number of atoms	15125	wwPDB-VP
Average B, all atoms (Å ²)	43.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 17.69% 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: 6L1, CL

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	1.05	5/3770 (0.1%)	1.07	6/5134 (0.1%)
1	B	0.96	2/3770 (0.1%)	1.05	7/5134 (0.1%)
1	C	1.00	3/3782 (0.1%)	1.08	9/5151 (0.2%)
1	D	0.96	2/3774 (0.1%)	1.07	6/5136 (0.1%)
All	All	1.00	12/15096 (0.1%)	1.07	28/20555 (0.1%)

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	B	0	1
1	C	0	1
1	D	0	1
All	All	0	4

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	183	MET	N-CA	6.25	1.53	1.46
1	A	94	PRO	CA-C	-6.23	1.44	1.52
1	C	377	THR	CA-C	6.08	1.60	1.52
1	A	39	THR	CA-C	6.08	1.60	1.52
1	D	179	LYS	CA-C	5.69	1.59	1.52
1	B	374	SER	CA-C	5.60	1.59	1.52
1	B	401	GLN	CA-C	-5.36	1.45	1.52
1	C	343	ALA	CA-C	5.35	1.59	1.52
1	A	40	GLU	N-CA	5.20	1.52	1.46
1	D	6	PHE	N-CA	5.19	1.52	1.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	344	HIS	CA-C	-5.10	1.46	1.53
1	A	93	LEU	N-CA	-5.09	1.39	1.45

All (28) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	448	THR	N-CA-C	11.44	123.83	111.36
1	C	177	ARG	CA-C-N	9.48	131.69	119.84
1	C	177	ARG	C-N-CA	9.48	131.69	119.84
1	C	25	ARG	N-CA-CB	6.77	120.35	110.26
1	B	15	ARG	N-CA-C	6.21	119.14	109.52
1	A	160	VAL	CB-CA-C	-6.12	103.55	110.96
1	A	400	GLY	N-CA-C	-5.87	107.29	114.92
1	C	400	GLY	N-CA-C	-5.84	107.33	114.92
1	C	11	ASN	N-CA-C	5.78	117.28	109.24
1	A	340	ILE	N-CA-C	-5.67	107.22	112.43
1	D	361	GLU	CA-C-N	-5.59	114.50	120.03
1	D	361	GLU	C-N-CA	-5.59	114.50	120.03
1	A	216	ASP	N-CA-CB	-5.54	101.13	110.49
1	B	361	GLU	CA-C-N	-5.39	114.70	120.03
1	B	361	GLU	C-N-CA	-5.39	114.70	120.03
1	A	207	VAL	CB-CA-C	-5.36	106.12	111.80
1	A	466	VAL	N-CA-C	5.34	116.42	108.46
1	C	466	VAL	N-CA-C	5.25	116.05	108.48
1	C	160	VAL	CB-CA-C	-5.20	104.67	110.96
1	C	15	ARG	N-CA-C	5.15	117.51	109.52
1	D	400	GLY	N-CA-C	-5.15	108.22	114.92
1	B	76	ASP	N-CA-C	-5.12	103.64	110.55
1	D	15	ARG	N-CA-C	5.07	117.38	109.52
1	B	160	VAL	CB-CA-C	-5.06	104.84	110.96
1	C	216	ASP	N-CA-CB	-5.06	101.94	110.49
1	B	216	ASP	N-CA-CB	-5.01	102.01	110.49
1	D	216	ASP	N-CA-CB	-5.01	102.03	110.49
1	B	400	GLY	N-CA-C	-5.00	108.41	114.92

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	215	PHE	Peptide
1	B	215	PHE	Peptide
1	C	215	PHE	Peptide

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Mol	Chain	Res	Type	Group
1	D	215	PHE	Peptide

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	3685	0	3677	41	0
1	B	3685	0	3676	45	0
1	C	3697	0	3685	42	0
1	D	3691	0	3681	49	0
2	A	29	0	0	2	0
2	B	29	0	0	3	0
2	C	29	0	0	1	0
2	D	29	0	0	1	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
3	C	1	0	0	0	0
3	D	1	0	0	0	0
4	A	60	0	0	1	0
4	B	58	0	0	1	0
4	C	69	0	0	1	0
4	D	60	0	0	1	0
All	All	15125	0	14719	166	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 6.

All (166) 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:281:GLY:O	1:D:284:ARG:NH1	2.04	0.91
1:A:206:ARG:NH2	1:C:25:ARG:O	2.21	0.72
1:D:481:GLU:H	1:D:481:GLU:CD	2.05	0.64
1:D:127:ARG:O	1:D:128:GLU:HG3	1.99	0.63
1:C:69:ASP:O	1:C:94:PRO:HD2	2.00	0.61
1:D:186:ARG:O	1:D:187:ALA:C	2.43	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:69:ASP:O	1:A:94:PRO:HD2	2.01	0.60
1:D:289:SER:HB3	1:D:313:CYS:HB3	1.84	0.60
1:D:367[B]:HIS:CD2	1:D:367[B]:HIS:C	2.79	0.59
1:A:371:ARG:NH2	1:A:393:ASP:OD2	2.35	0.59
1:B:47:ARG:HH22	1:D:48:GLN:HE22	1.50	0.59
1:A:289:SER:HB3	1:A:313:CYS:HB3	1.85	0.59
1:D:69:ASP:O	1:D:94:PRO:HD2	2.02	0.59
1:A:186:ARG:O	1:A:187:ALA:C	2.41	0.59
1:C:289:SER:HB3	1:C:313:CYS:HB3	1.84	0.59
1:B:186:ARG:O	1:B:187:ALA:C	2.43	0.58
1:B:371:ARG:NH2	1:B:393:ASP:OD2	2.37	0.58
1:D:187:ALA:HB1	1:D:374:SER:O	2.04	0.58
1:B:69:ASP:O	1:B:94:PRO:HD2	2.04	0.58
1:C:371:ARG:NH2	1:C:393:ASP:OD2	2.36	0.57
1:A:66:ASP:HA	4:A:736:HOH:O	2.04	0.57
1:C:187:ALA:HB1	1:C:374:SER:O	2.04	0.57
1:B:289:SER:HB3	1:B:313:CYS:HB3	1.86	0.57
1:B:187:ALA:HB1	1:B:374:SER:O	2.05	0.57
1:A:187:ALA:HB1	1:A:374:SER:O	2.04	0.56
1:B:27:THR:HB	1:B:30:LYS:HG2	1.88	0.56
1:B:28:PRO:HG2	1:D:48:GLN:HE21	1.70	0.55
1:C:186:ARG:O	1:C:187:ALA:C	2.44	0.55
1:C:30:LYS:NZ	1:C:203:PRO:O	2.31	0.55
1:D:192:TYR:CE1	1:D:223:GLY:HA3	2.43	0.54
1:A:241:ARG:O	1:A:242:TRP:CG	2.61	0.54
1:D:34:LEU:HD23	1:D:42:GLY:O	2.08	0.53
1:D:378:GLY:HA2	1:D:386:THR:HG23	1.91	0.53
2:A:601:6L1:N3	2:A:601:6L1:O2	2.41	0.53
1:C:378:GLY:HA2	1:C:386:THR:HG23	1.91	0.52
1:A:378:GLY:HA2	1:A:386:THR:HG23	1.92	0.52
1:B:378:GLY:HA2	1:B:386:THR:HG23	1.92	0.51
1:A:192:TYR:CE1	1:A:223:GLY:HA3	2.44	0.51
1:A:17:HIS:CE1	1:A:90:SER:HA	2.46	0.51
1:B:220:LEU:C	1:B:220:LEU:HD23	2.36	0.51
1:A:157:ARG:NH2	1:B:371:ARG:HD2	2.26	0.51
1:C:220:LEU:C	1:C:220:LEU:HD23	2.36	0.51
1:C:241:ARG:O	1:C:242:TRP:CG	2.64	0.50
1:D:220:LEU:C	1:D:220:LEU:HD23	2.36	0.50
1:B:17:HIS:CE1	1:B:90:SER:HA	2.47	0.50
1:B:241:ARG:O	1:B:242:TRP:CG	2.65	0.50
1:C:113:THR:HG22	1:C:177:ARG:NH2	2.27	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:192:TYR:CE1	1:C:223:GLY:HA3	2.47	0.50
1:D:17:HIS:CE1	1:D:90:SER:HA	2.46	0.50
1:C:136:THR:HG22	1:C:147:GLU:HB2	1.94	0.49
1:D:241:ARG:O	1:D:242:TRP:CG	2.65	0.49
1:B:47:ARG:NH2	1:D:48:GLN:HE22	2.11	0.49
1:A:136:THR:HG22	1:A:147:GLU:HB2	1.95	0.49
1:B:192:TYR:CE1	1:B:223:GLY:HA3	2.48	0.49
1:B:136:THR:HG22	1:B:147:GLU:HB2	1.95	0.49
1:A:220:LEU:C	1:A:220:LEU:HD23	2.38	0.48
1:C:95:PHE:CE2	1:C:167:TYR:HB3	2.48	0.48
1:B:70:ARG:HD2	1:B:114:VAL:HG22	1.95	0.48
1:C:367[B]:HIS:C	1:C:367[B]:HIS:CD2	2.91	0.48
1:D:70:ARG:HD2	1:D:114:VAL:HG22	1.96	0.48
1:B:244:ARG:O	1:B:248:ARG:HG2	2.14	0.48
1:D:242:TRP:HB3	1:D:245:ARG:HD2	1.96	0.47
1:C:244:ARG:O	1:C:248:ARG:HG2	2.14	0.47
1:C:295:LEU:HD13	1:C:335:LEU:O	2.14	0.47
1:A:95:PHE:CE2	1:A:167:TYR:HB3	2.49	0.47
1:A:244:ARG:O	1:A:248:ARG:HG2	2.14	0.47
1:B:28:PRO:CG	1:D:48:GLN:HE21	2.27	0.47
1:D:237:ARG:O	1:D:238:ALA:C	2.57	0.47
1:A:70:ARG:HD2	1:A:114:VAL:HG22	1.96	0.47
1:A:237:ARG:O	1:A:238:ALA:C	2.57	0.47
1:A:253:SER:HA	1:C:29:GLU:OE1	2.14	0.47
1:A:295:LEU:HD13	1:A:335:LEU:O	2.15	0.47
1:D:136:THR:HG22	1:D:147:GLU:HB2	1.95	0.47
1:D:457:LEU:HD21	1:D:465:PRO:HB2	1.96	0.47
1:B:457:LEU:HD21	1:B:465:PRO:HB2	1.96	0.47
1:C:17:HIS:CE1	1:C:90:SER:HA	2.51	0.46
1:B:290:GLY:HA2	2:B:601:6L1:O1	2.14	0.46
1:C:335:LEU:HA	4:C:706:HOH:O	2.14	0.46
1:D:261:ALA:O	1:D:264:ILE:HG12	2.14	0.46
1:A:367[B]:HIS:CE1	1:A:407:GLY:HA2	2.50	0.46
1:B:237:ARG:O	1:B:238:ALA:C	2.58	0.46
1:B:261:ALA:O	1:B:264:ILE:HG12	2.16	0.46
1:C:70:ARG:HD2	1:C:114:VAL:HG22	1.98	0.45
1:A:242:TRP:HB3	1:A:245:ARG:HD2	1.98	0.45
1:C:30:LYS:HG3	1:C:31:PRO:HD2	1.98	0.45
1:C:237:ARG:O	1:C:238:ALA:C	2.59	0.45
1:B:242:TRP:HB3	1:B:245:ARG:HD2	1.97	0.45
1:A:261:ALA:O	1:A:264:ILE:HG12	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:10:GLN:O	1:D:13:VAL:HG22	2.17	0.45
1:B:335:LEU:HA	1:B:335:LEU:HD12	1.67	0.45
1:C:187:ALA:HA	1:C:374:SER:HA	1.99	0.45
1:C:242:TRP:HB3	1:C:245:ARG:HD2	1.98	0.45
1:A:187:ALA:HA	1:A:374:SER:HA	1.99	0.45
1:C:261:ALA:O	1:C:264:ILE:HG12	2.17	0.45
1:C:457:LEU:HD21	1:C:465:PRO:HB2	1.98	0.45
1:B:393:ASP:HA	1:B:394:PRO:HD3	1.85	0.44
1:C:74:GLU:HA	1:C:98:VAL:O	2.17	0.44
1:B:295:LEU:O	1:B:296:PRO:C	2.60	0.44
1:A:216:ASP:OD2	2:A:601:6L1:N3	2.50	0.44
1:D:74:GLU:HA	1:D:98:VAL:O	2.18	0.44
1:D:34:LEU:HD12	1:D:233:VAL:HG22	1.98	0.44
1:B:95:PHE:CE2	1:B:167:TYR:HB3	2.52	0.44
1:D:352:LEU:HD22	1:D:369:HIS:CG	2.52	0.44
1:A:470:PHE:CD2	1:A:502:HIS:HB2	2.53	0.44
1:A:393:ASP:HA	1:A:394:PRO:HD3	1.86	0.44
1:A:457:LEU:HD21	1:A:465:PRO:HB2	2.00	0.44
1:B:320:VAL:O	2:B:601:6L1:N3	2.51	0.44
1:D:337:LYS:HE3	1:D:420:PHE:O	2.18	0.44
1:D:367[B]:HIS:CE1	1:D:407:GLY:HA2	2.53	0.44
1:B:10:GLN:O	1:B:13:VAL:HG22	2.17	0.43
1:C:393:ASP:HA	1:C:394:PRO:HD3	1.86	0.43
1:D:103:PRO:O	1:D:104:ALA:C	2.60	0.43
1:A:74:GLU:HA	1:A:98:VAL:O	2.18	0.43
1:B:352:LEU:HD22	1:B:369:HIS:CG	2.53	0.43
1:C:103:PRO:O	1:C:104:ALA:C	2.61	0.43
1:B:329:ARG:HA	1:B:330:PRO:HA	1.92	0.43
1:C:216:ASP:OD2	2:C:601:6L1:N3	2.52	0.43
1:D:95:PHE:CE2	1:D:167:TYR:HB3	2.54	0.43
1:B:311:VAL:CG1	4:B:728:HOH:O	2.65	0.43
1:C:371:ARG:HD2	1:D:157:ARG:NH2	2.34	0.43
1:D:187:ALA:HA	1:D:374:SER:HA	2.01	0.43
1:A:70:ARG:HG2	1:A:94:PRO:HG2	2.01	0.43
1:A:266:ARG:HH11	1:A:266:ARG:HD2	1.65	0.43
1:B:47:ARG:HH22	1:D:48:GLN:NE2	2.16	0.43
1:C:457:LEU:HD23	1:C:458:LEU:C	2.44	0.43
1:D:206:ARG:NH1	1:D:253:SER:O	2.52	0.42
1:D:216:ASP:OD2	2:D:601:6L1:N3	2.52	0.42
1:A:103:PRO:O	1:A:104:ALA:C	2.60	0.42
1:A:316:SER:O	1:A:317:THR:C	2.62	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:275:GLU:O	1:B:278:ALA:HB3	2.20	0.42
1:B:337:LYS:HE3	1:B:420:PHE:O	2.19	0.42
1:C:470:PHE:CD2	1:C:502:HIS:HB2	2.54	0.42
1:D:66:ASP:OD2	1:D:155:GLY:N	2.52	0.42
1:D:275:GLU:O	1:D:278:ALA:HB3	2.19	0.42
1:A:295:LEU:HD11	1:A:336:THR:C	2.44	0.42
1:A:352:LEU:HD22	1:A:369:HIS:CG	2.55	0.42
1:D:34:LEU:HD23	1:D:34:LEU:HA	1.86	0.42
1:A:31:PRO:HG3	1:C:27:THR:HG22	2.01	0.41
1:B:74:GLU:HA	1:B:98:VAL:O	2.19	0.41
1:C:352:LEU:HD22	1:C:369:HIS:CG	2.55	0.41
1:D:329:ARG:HA	1:D:330:PRO:HA	1.93	0.41
1:C:11:ASN:HA	1:C:12:PRO:HD2	1.99	0.41
1:B:47:ARG:NH2	1:D:48:GLN:NE2	2.68	0.41
1:B:331:VAL:HG13	1:B:335:LEU:HD23	2.01	0.41
1:C:295:LEU:O	1:C:296:PRO:C	2.64	0.41
1:B:470:PHE:CD2	1:B:502:HIS:HB2	2.55	0.41
1:C:331:VAL:HG13	1:C:335:LEU:HD23	2.02	0.41
1:B:103:PRO:O	1:B:104:ALA:C	2.64	0.41
1:D:295:LEU:O	1:D:296:PRO:C	2.63	0.41
1:D:367[B]:HIS:C	1:D:367[B]:HIS:HD2	2.29	0.41
1:A:275:GLU:O	1:A:278:ALA:HB3	2.21	0.41
1:D:325:THR:HG22	4:D:731:HOH:O	2.20	0.41
1:C:168:MET:HG2	1:C:182:VAL:HG22	2.03	0.41
1:C:193:ARG:NE	1:D:12:PRO:HA	2.36	0.41
1:D:470:PHE:CD2	1:D:502:HIS:HB2	2.56	0.41
1:D:27:THR:HB	1:D:30:LYS:CG	2.51	0.41
1:B:313:CYS:O	2:B:601:6L1:N6	2.54	0.40
1:A:191:PHE:CE2	1:A:320:VAL:HG11	2.56	0.40
1:A:261:ALA:O	1:A:262:PRO:C	2.63	0.40
1:B:206:ARG:NH1	1:B:253:SER:O	2.54	0.40
1:A:295:LEU:O	1:A:296:PRO:C	2.63	0.40
1:B:191:PHE:CE2	1:B:320:VAL:HG11	2.57	0.40
1:B:316:SER:O	1:B:317:THR:C	2.65	0.40
1:A:195:MET:SD	1:A:224:LEU:HD13	2.61	0.40
1:C:195:MET:SD	1:C:224:LEU:HD13	2.61	0.40
1:D:195:MET:SD	1:D:224:LEU:HD13	2.61	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	483/552 (88%)	457 (95%)	24 (5%)	2 (0%)	30	51
1	B	480/552 (87%)	452 (94%)	25 (5%)	3 (1%)	21	42
1	C	484/552 (88%)	456 (94%)	26 (5%)	2 (0%)	30	51
1	D	478/552 (87%)	451 (94%)	24 (5%)	3 (1%)	21	42
All	All	1925/2208 (87%)	1816 (94%)	99 (5%)	10 (0%)	24	46

All (10) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	216	ASP
1	B	216	ASP
1	C	216	ASP
1	D	216	ASP
1	A	238	ALA
1	B	238	ALA
1	B	318	GLU
1	C	238	ALA
1	D	238	ALA
1	D	318	GLU

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	384/439 (88%)	354 (92%)	30 (8%)	11	26

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	B	384/439 (88%)	355 (92%)	29 (8%)	12	27
1	C	385/439 (88%)	357 (93%)	28 (7%)	13	29
1	D	385/439 (88%)	351 (91%)	34 (9%)	9	21
All	All	1538/1756 (88%)	1417 (92%)	121 (8%)	11	26

All (121) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	13	VAL
1	A	25	ARG
1	A	36	LEU
1	A	66	ASP
1	A	85	LEU
1	A	90	SER
1	A	106	ARG
1	A	114	VAL
1	A	126	ARG
1	A	130	LEU
1	A	132	GLU
1	A	133	SER
1	A	136	THR
1	A	148	ARG
1	A	171	THR
1	A	201	VAL
1	A	204	GLU
1	A	220	LEU
1	A	237	ARG
1	A	239	LEU
1	A	248	ARG
1	A	279	LEU
1	A	298	VAL
1	A	311	VAL
1	A	352	LEU
1	A	361	GLU
1	A	402	THR
1	A	403	VAL
1	A	428	VAL
1	A	454	SER
1	B	22	THR
1	B	25	ARG
1	B	34	LEU

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Mol	Chain	Res	Type
1	B	66	ASP
1	B	90	SER
1	B	106	ARG
1	B	114	VAL
1	B	126	ARG
1	B	130	LEU
1	B	132	GLU
1	B	133	SER
1	B	136	THR
1	B	148	ARG
1	B	201	VAL
1	B	204	GLU
1	B	220	LEU
1	B	237	ARG
1	B	239	LEU
1	B	248	ARG
1	B	279	LEU
1	B	291	GLU
1	B	298	VAL
1	B	311	VAL
1	B	352	LEU
1	B	402	THR
1	B	403	VAL
1	B	428	VAL
1	B	454	SER
1	B	457	LEU
1	C	36	LEU
1	C	66	ASP
1	C	85	LEU
1	C	90	SER
1	C	114	VAL
1	C	126	ARG
1	C	130	LEU
1	C	132	GLU
1	C	133	SER
1	C	136	THR
1	C	148	ARG
1	C	158	ARG
1	C	177	ARG
1	C	201	VAL
1	C	220	LEU
1	C	237	ARG

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Mol	Chain	Res	Type
1	C	239	LEU
1	C	248	ARG
1	C	279	LEU
1	C	291	GLU
1	C	298	VAL
1	C	311	VAL
1	C	352	LEU
1	C	402	THR
1	C	403	VAL
1	C	428	VAL
1	C	436	GLU
1	C	454	SER
1	D	3	ARG
1	D	22	THR
1	D	25	ARG
1	D	66	ASP
1	D	85	LEU
1	D	90	SER
1	D	101	GLU
1	D	110	VAL
1	D	114	VAL
1	D	126	ARG
1	D	130	LEU
1	D	132	GLU
1	D	133	SER
1	D	136	THR
1	D	148	ARG
1	D	171	THR
1	D	201	VAL
1	D	220	LEU
1	D	237	ARG
1	D	239	LEU
1	D	279	LEU
1	D	284	ARG
1	D	291	GLU
1	D	298	VAL
1	D	311	VAL
1	D	352	LEU
1	D	371	ARG
1	D	402	THR
1	D	403	VAL
1	D	428	VAL

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Mol	Chain	Res	Type
1	D	443	ARG
1	D	454	SER
1	D	457	LEU
1	D	478	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	433	ASN
1	B	433	ASN
1	C	433	ASN
1	D	48	GLN
1	D	433	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 [i](#)

Of 8 ligands modelled in this entry, 4 are 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	6L1	B	601	-	30,31,31	2.21	9 (30%)	43,46,46	2.35	17 (39%)
2	6L1	A	601	-	30,31,31	2.04	13 (43%)	43,46,46	1.99	13 (30%)
2	6L1	D	601	-	30,31,31	1.92	9 (30%)	43,46,46	2.39	18 (41%)
2	6L1	C	601	-	30,31,31	2.27	9 (30%)	43,46,46	1.87	11 (25%)

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	6L1	B	601	-	-	4/17/35/35	0/3/3/3
2	6L1	A	601	-	-	8/17/35/35	0/3/3/3
2	6L1	D	601	-	-	5/17/35/35	0/3/3/3
2	6L1	C	601	-	-	3/17/35/35	0/3/3/3

All (40) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	601	6L1	C14-N1	6.86	1.46	1.33
2	B	601	6L1	C14-N1	6.57	1.45	1.33
2	A	601	6L1	C14-N1	5.23	1.43	1.33
2	C	601	6L1	C13-N4	5.10	1.60	1.46
2	C	601	6L1	P1-O2	4.85	1.69	1.60
2	B	601	6L1	C14-N2	4.58	1.42	1.33
2	B	601	6L1	P1-O2	4.31	1.68	1.60
2	D	601	6L1	C14-N2	4.07	1.41	1.33
2	D	601	6L1	C14-N1	3.69	1.40	1.33
2	D	601	6L1	C12-C13	-3.62	1.42	1.53
2	A	601	6L1	P1-O3	3.58	1.63	1.50
2	D	601	6L1	O8-C12	-3.33	1.34	1.43
2	D	601	6L1	P1-O3	3.23	1.62	1.50
2	C	601	6L1	C4-N5	3.14	1.37	1.31
2	B	601	6L1	O6-C13	3.10	1.49	1.42
2	B	601	6L1	C7-C8	3.02	1.56	1.50
2	A	601	6L1	O6-C13	2.92	1.48	1.42
2	A	601	6L1	C12-C13	-2.67	1.45	1.53
2	C	601	6L1	O6-C13	2.67	1.48	1.42
2	B	601	6L1	C2-N5	-2.65	1.34	1.39
2	C	601	6L1	O8-C12	2.63	1.49	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	601	6L1	C2-C1	-2.57	1.34	1.39
2	A	601	6L1	C7-C8	2.52	1.55	1.50
2	D	601	6L1	C11-C10	-2.46	1.46	1.53
2	A	601	6L1	C13-N4	2.46	1.53	1.46
2	A	601	6L1	C7-C6	-2.32	1.49	1.53
2	A	601	6L1	C2-N5	-2.25	1.35	1.39
2	C	601	6L1	C7-C8	2.23	1.55	1.50
2	D	601	6L1	C7-C8	2.22	1.55	1.50
2	B	601	6L1	C2-C3	-2.19	1.34	1.41
2	A	601	6L1	C14-N2	2.17	1.37	1.33
2	A	601	6L1	P1-O2	2.15	1.64	1.60
2	A	601	6L1	P1-O5	2.10	1.67	1.59
2	A	601	6L1	C2-C3	-2.09	1.35	1.41
2	D	601	6L1	O6-C13	2.05	1.46	1.42
2	C	601	6L1	C2-C3	-2.03	1.35	1.41
2	D	601	6L1	C1-N4	-2.02	1.33	1.37
2	A	601	6L1	C1-N4	-2.02	1.33	1.37
2	B	601	6L1	C3-N6	-2.02	1.29	1.34
2	C	601	6L1	C14-N2	2.01	1.37	1.33

All (59) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	D	601	6L1	N2-C14-N1	-7.12	117.80	128.58
2	A	601	6L1	N2-C14-N1	-6.83	118.24	128.58
2	C	601	6L1	N2-C14-N1	-5.85	119.73	128.58
2	B	601	6L1	C2-C1-N2	-5.35	119.35	126.72
2	B	601	6L1	N2-C14-N1	-4.89	121.18	128.58
2	B	601	6L1	N4-C4-N5	-4.71	107.25	113.94
2	D	601	6L1	C2-C1-N2	-4.54	120.47	126.72
2	B	601	6L1	O2-P1-O5	4.04	115.14	103.00
2	C	601	6L1	C2-C1-N2	-3.71	121.60	126.72
2	B	601	6L1	C2-N5-C4	3.67	109.21	103.45
2	B	601	6L1	C3-C2-C1	3.50	121.96	117.18
2	D	601	6L1	C14-N2-C1	3.49	120.34	111.83
2	D	601	6L1	O4-P1-O2	3.47	116.17	104.94
2	A	601	6L1	O6-C10-C9	3.40	120.22	109.33
2	D	601	6L1	C1-N4-C13	-3.34	118.82	126.63
2	A	601	6L1	C2-C1-N4	3.33	109.44	105.81
2	B	601	6L1	C14-N1-C3	-3.31	113.30	118.73
2	A	601	6L1	O2-C8-C7	3.28	118.65	110.95
2	B	601	6L1	N2-C1-N4	3.26	132.72	127.17

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	601	6L1	C2-C1-N2	-3.26	122.22	126.72
2	B	601	6L1	O2-C8-C7	3.19	118.43	110.95
2	D	601	6L1	C13-N4-C4	3.16	134.12	127.09
2	A	601	6L1	C14-N2-C1	3.12	119.45	111.83
2	D	601	6L1	O6-C10-C9	-3.04	99.58	109.33
2	B	601	6L1	C2-C3-N1	3.02	125.18	117.51
2	C	601	6L1	C2-C1-N4	3.00	109.08	105.81
2	C	601	6L1	C14-N2-C1	3.00	119.16	111.83
2	D	601	6L1	N4-C4-N5	-3.00	109.68	113.94
2	D	601	6L1	O6-C13-N4	2.98	113.81	108.09
2	D	601	6L1	C2-C1-N4	2.95	109.02	105.81
2	B	601	6L1	C14-N2-C1	2.94	119.01	111.83
2	B	601	6L1	C2-C3-N6	-2.94	116.01	123.29
2	D	601	6L1	O1-C8-C7	-2.87	117.97	124.65
2	D	601	6L1	C1-C2-N5	-2.86	107.31	110.58
2	A	601	6L1	C13-N4-C4	2.85	133.43	127.09
2	D	601	6L1	O2-P1-O5	2.85	111.58	103.00
2	A	601	6L1	N4-C4-N5	-2.84	109.91	113.94
2	C	601	6L1	O6-C10-C9	2.78	118.23	109.33
2	B	601	6L1	C1-C2-N5	-2.76	107.42	110.58
2	C	601	6L1	O2-C8-C7	2.73	117.37	110.95
2	D	601	6L1	O6-C13-C12	-2.73	100.78	106.62
2	D	601	6L1	O2-C8-C7	2.72	117.33	110.95
2	D	601	6L1	O5-P1-O3	-2.70	98.22	108.94
2	A	601	6L1	C1-N4-C13	-2.69	120.33	126.63
2	A	601	6L1	C1-C2-N5	-2.66	107.53	110.58
2	B	601	6L1	C13-N4-C4	-2.57	121.39	127.09
2	C	601	6L1	C5-C6-C7	2.53	114.80	111.72
2	B	601	6L1	O6-C13-N4	-2.46	103.37	108.09
2	A	601	6L1	O4-P1-O5	2.36	118.25	107.57
2	A	601	6L1	O8-C12-C11	-2.35	104.28	111.82
2	B	601	6L1	C1-N4-C4	2.32	108.18	105.74
2	C	601	6L1	N4-C4-N5	-2.30	110.67	113.94
2	D	601	6L1	O2-P1-O3	-2.28	102.60	109.95
2	C	601	6L1	O2-P1-O5	2.27	109.81	103.00
2	D	601	6L1	C2-N5-C4	2.23	106.96	103.45
2	A	601	6L1	C2-N5-C4	2.22	106.94	103.45
2	C	601	6L1	C13-N4-C4	2.11	131.78	127.09
2	C	601	6L1	C2-C3-N1	2.08	122.80	117.51
2	B	601	6L1	O4-P1-O5	2.05	116.84	107.57

There are no chirality outliers.

All (20) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	601	6L1	C9-O5-P1-O2
2	A	601	6L1	C9-O5-P1-O3
2	A	601	6L1	C9-O5-P1-O4
2	A	601	6L1	O6-C10-C9-O5
2	D	601	6L1	C9-O5-P1-O3
2	D	601	6L1	C9-O5-P1-O4
2	A	601	6L1	C11-C10-C9-O5
2	D	601	6L1	O6-C10-C9-O5
2	D	601	6L1	C11-C10-C9-O5
2	C	601	6L1	O6-C10-C9-O5
2	C	601	6L1	C11-C10-C9-O5
2	A	601	6L1	C8-O2-P1-O5
2	D	601	6L1	C9-O5-P1-O2
2	B	601	6L1	C8-O2-P1-O5
2	C	601	6L1	C8-O2-P1-O5
2	A	601	6L1	C6-C7-C8-O2
2	B	601	6L1	C6-C7-C8-O2
2	B	601	6L1	C6-C7-C8-O1
2	A	601	6L1	C6-C7-C8-O1
2	B	601	6L1	C8-O2-P1-O3

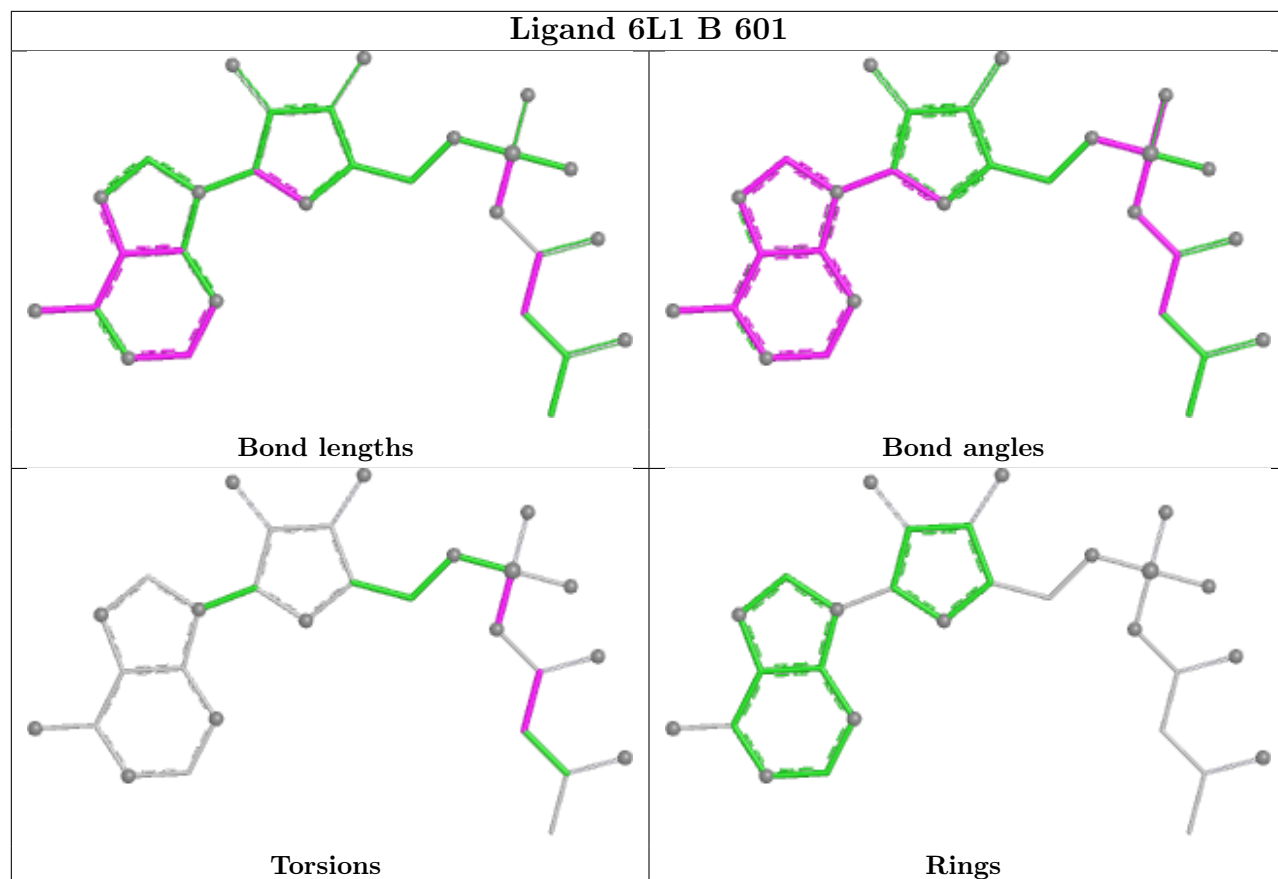
There are no ring outliers.

4 monomers are involved in 7 short contacts:

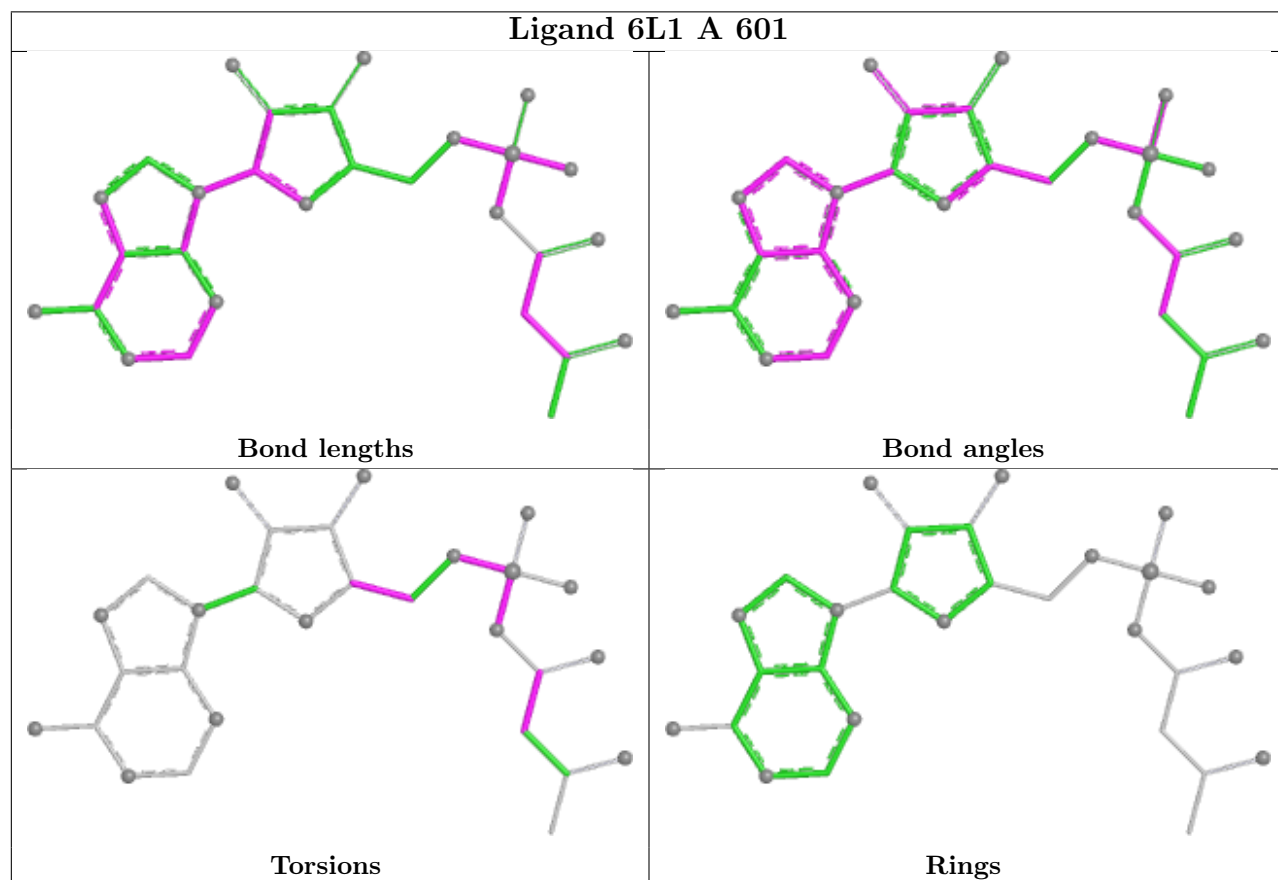
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	601	6L1	3	0
2	A	601	6L1	2	0
2	D	601	6L1	1	0
2	C	601	6L1	1	0

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.

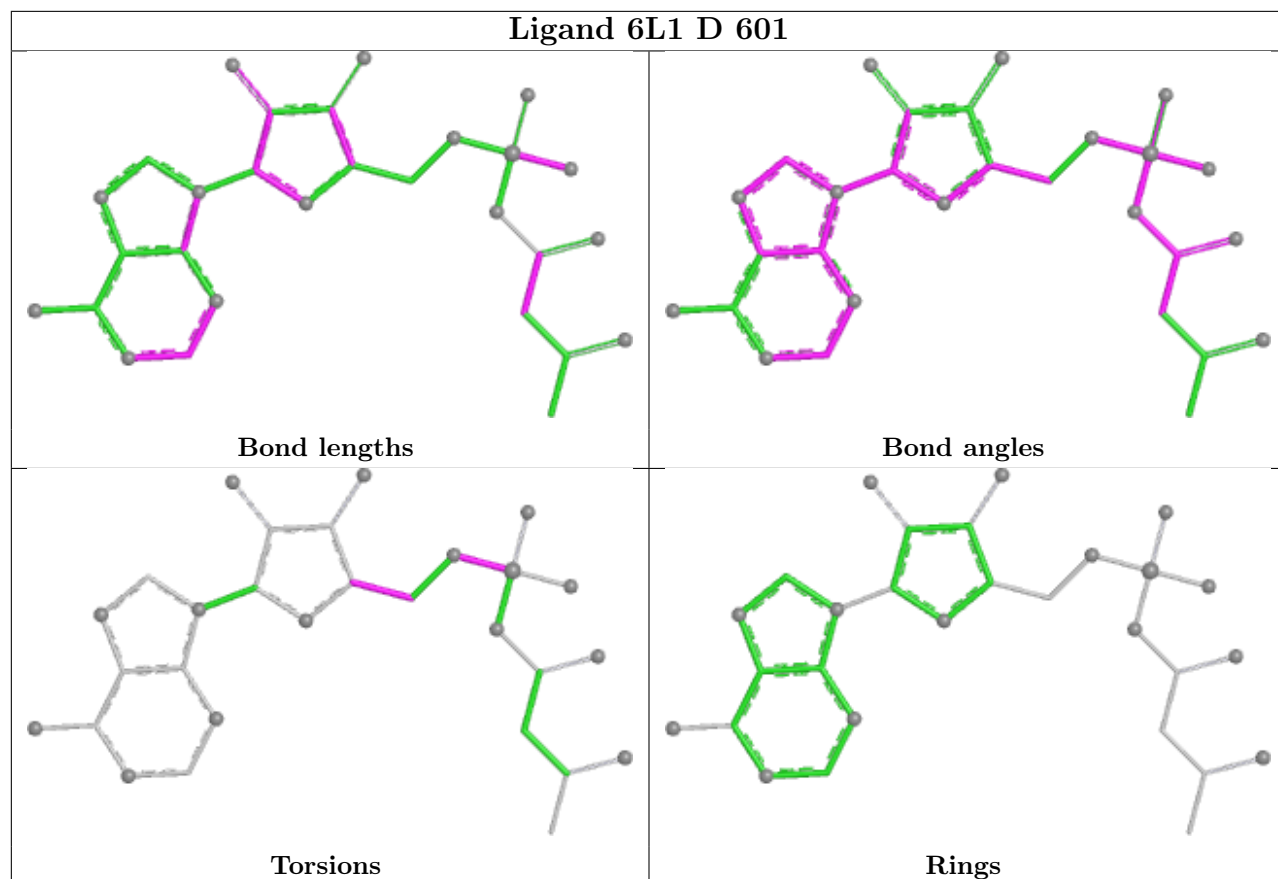
Ligand 6L1 B 601



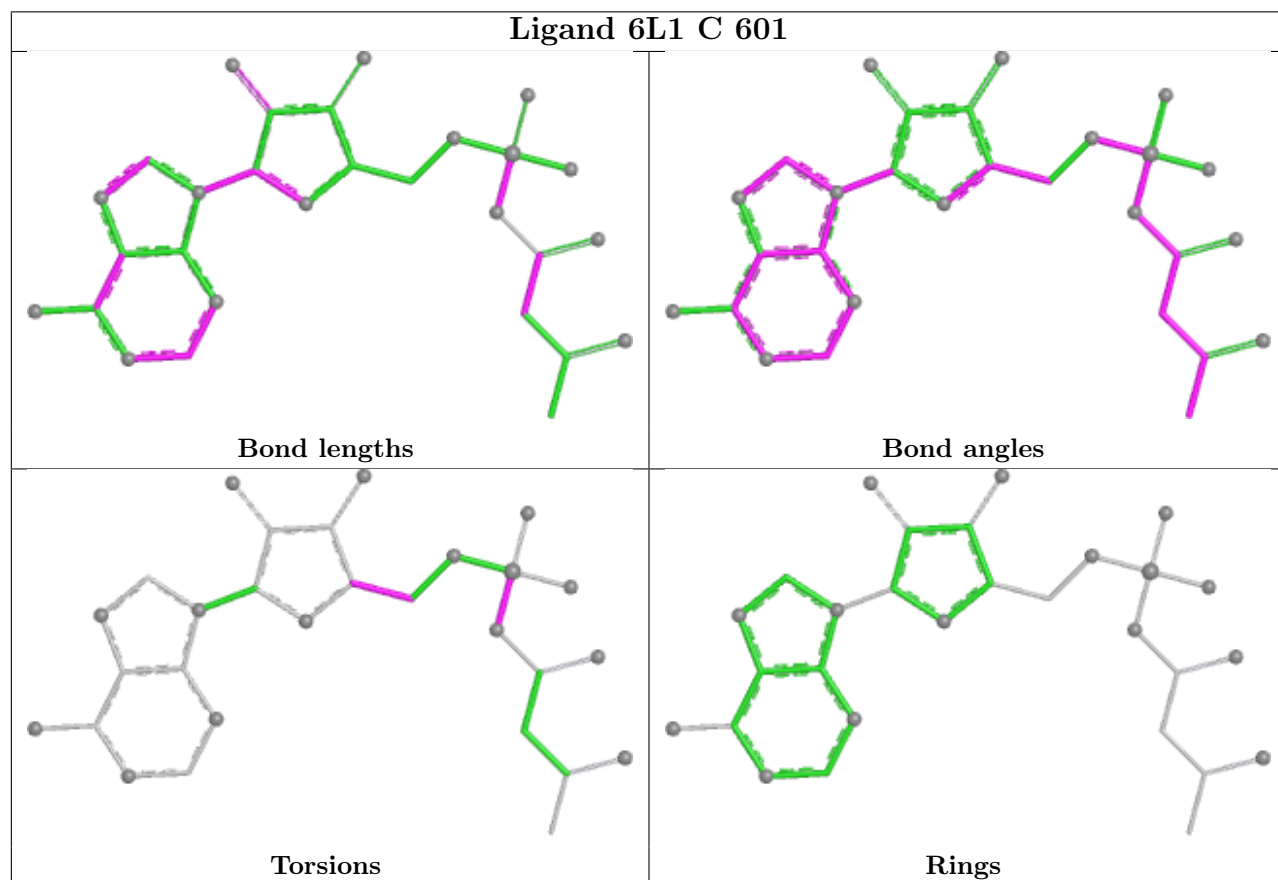
Ligand 6L1 A 601



Ligand 6L1 D 601



Ligand 6L1 C 601



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	488/552 (88%)	0.45	33 (6%) 23 19	11, 36, 71, 100	1 (0%)
1	B	487/552 (88%)	0.60	50 (10%) 12 9	14, 41, 83, 102	1 (0%)
1	C	489/552 (88%)	0.47	34 (6%) 22 18	13, 37, 78, 94	1 (0%)
1	D	487/552 (88%)	0.70	57 (11%) 9 7	15, 40, 80, 112	1 (0%)
All	All	1951/2208 (88%)	0.55	174 (8%) 15 12	11, 39, 79, 112	4 (0%)

All (174) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	458	LEU	6.0
1	D	36	LEU	5.7
1	D	332	PRO	5.6
1	D	171	THR	5.0
1	B	508	PRO	4.7
1	C	458	LEU	4.6
1	B	482	MET	4.6
1	B	458	LEU	4.4
1	A	9	ALA	4.4
1	D	482	MET	4.3
1	D	494	ASP	4.3
1	D	479	PHE	4.0
1	D	490	GLU	3.9
1	D	508	PRO	3.8
1	D	270	ARG	3.8
1	C	36	LEU	3.8
1	C	479	PHE	3.8
1	C	475	PRO	3.8
1	A	39	THR	3.7
1	D	489	LEU	3.7
1	A	203	PRO	3.7

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Mol	Chain	Res	Type	RSRZ
1	A	171	THR	3.7
1	B	43	TYR	3.7
1	D	464	ASP	3.7
1	D	488	CYS	3.7
1	A	465	PRO	3.7
1	B	459	PRO	3.7
1	C	123	GLU	3.6
1	B	489	LEU	3.6
1	A	334	GLY	3.5
1	B	481	GLU	3.5
1	B	34	LEU	3.5
1	B	335	LEU	3.5
1	C	464	ASP	3.5
1	D	43	TYR	3.4
1	B	449	GLY	3.4
1	D	241	ARG	3.4
1	D	446	GLU	3.4
1	B	479	PHE	3.3
1	B	270	ARG	3.3
1	B	284	ARG	3.2
1	D	492	LEU	3.2
1	A	508	PRO	3.1
1	B	494	ASP	3.1
1	C	507	LEU	3.1
1	A	475	PRO	3.1
1	A	507	LEU	3.1
1	D	504	LEU	3.1
1	B	507	LEU	3.1
1	A	494	ASP	3.1
1	B	442	ARG	3.0
1	D	25	ARG	3.0
1	D	448	THR	3.0
1	C	508	PRO	3.0
1	D	330	PRO	3.0
1	A	303	GLN	3.0
1	C	480	ASP	3.0
1	C	177	ARG	3.0
1	C	481	GLU	3.0
1	D	449	GLY	3.0
1	A	457	LEU	2.9
1	B	490	GLU	2.9
1	C	291	GLU	2.9

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Mol	Chain	Res	Type	RSRZ
1	C	271	HIS	2.9
1	B	464	ASP	2.9
1	A	202	GLY	2.9
1	D	336	THR	2.9
1	B	332	PRO	2.8
1	B	448	THR	2.8
1	D	485	GLY	2.8
1	B	495	TYR	2.8
1	C	37	SER	2.8
1	D	466	VAL	2.8
1	C	284	ARG	2.8
1	B	492	LEU	2.7
1	B	271	HIS	2.7
1	B	503	VAL	2.7
1	D	278	ALA	2.7
1	C	38	GLY	2.7
1	B	126	ARG	2.7
1	A	36	LEU	2.7
1	D	457	LEU	2.7
1	C	476	GLY	2.7
1	C	337	LYS	2.7
1	D	291	GLU	2.6
1	A	271	HIS	2.6
1	D	304	ALA	2.6
1	D	496	MET	2.6
1	A	431	ARG	2.6
1	A	506	ALA	2.6
1	B	106	ARG	2.5
1	C	431	ARG	2.5
1	C	442	ARG	2.5
1	A	291	GLU	2.5
1	D	493	PRO	2.5
1	B	241	ARG	2.5
1	C	494	ASP	2.5
1	D	486	ALA	2.5
1	B	138	ARG	2.5
1	D	269	LEU	2.5
1	A	38	GLY	2.5
1	A	449	GLY	2.5
1	D	447	PHE	2.5
1	B	488	CYS	2.4
1	D	271	HIS	2.4

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Mol	Chain	Res	Type	RSRZ
1	B	303	GLN	2.4
1	A	442	ARG	2.4
1	B	487	PHE	2.4
1	B	279	LEU	2.4
1	D	2	SER	2.4
1	A	337	LYS	2.4
1	D	54	GLU	2.4
1	B	5	VAL	2.4
1	D	138	ARG	2.4
1	B	484	LEU	2.3
1	C	446	GLU	2.3
1	D	442	ARG	2.3
1	D	331	VAL	2.3
1	D	503	VAL	2.3
1	D	272	GLU	2.3
1	A	466	VAL	2.3
1	C	490	GLU	2.3
1	C	268	ALA	2.2
1	D	273	ALA	2.2
1	D	123	GLU	2.2
1	B	431	ARG	2.2
1	C	245	ARG	2.2
1	D	475	PRO	2.2
1	C	489	LEU	2.2
1	D	507	LEU	2.2
1	C	506	ALA	2.2
1	B	245	ARG	2.2
1	B	500	ARG	2.2
1	D	151	ARG	2.2
1	B	330	PRO	2.2
1	D	497	ALA	2.2
1	A	245	ARG	2.2
1	C	500	ARG	2.2
1	A	11	ASN	2.2
1	C	303	GLN	2.2
1	C	129	GLY	2.2
1	C	457	LEU	2.2
1	B	333	ASP	2.2
1	A	37	SER	2.2
1	B	506	ALA	2.1
1	A	448	THR	2.1
1	D	487	PHE	2.1

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Mol	Chain	Res	Type	RSRZ
1	D	238	ALA	2.1
1	A	270	ARG	2.1
1	D	303	GLN	2.1
1	B	457	LEU	2.1
1	C	34	LEU	2.1
1	D	305	LEU	2.1
1	B	280	GLY	2.1
1	A	502	HIS	2.1
1	D	197	SER	2.1
1	A	451	ALA	2.1
1	B	491	GLU	2.1
1	C	451	ALA	2.1
1	B	267	GLY	2.1
1	D	495	TYR	2.1
1	B	13	VAL	2.1
1	B	486	ALA	2.0
1	B	475	PRO	2.0
1	D	465	PRO	2.0
1	D	502	HIS	2.0
1	A	447	PHE	2.0
1	B	123	GLU	2.0
1	B	439	GLU	2.0
1	D	480	ASP	2.0
1	D	242	TRP	2.0
1	B	307	LEU	2.0
1	A	500	ARG	2.0
1	C	106	ARG	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,

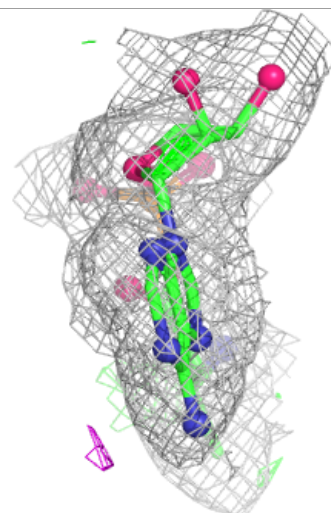
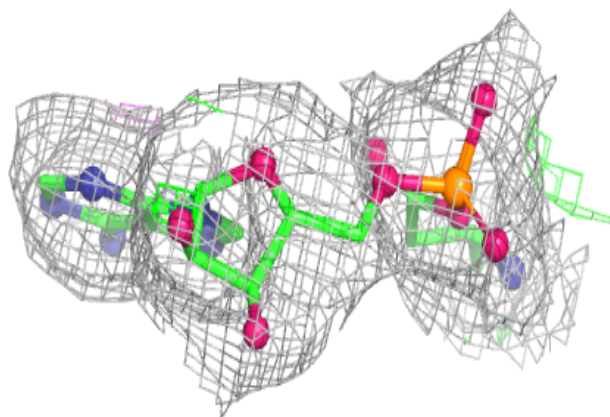
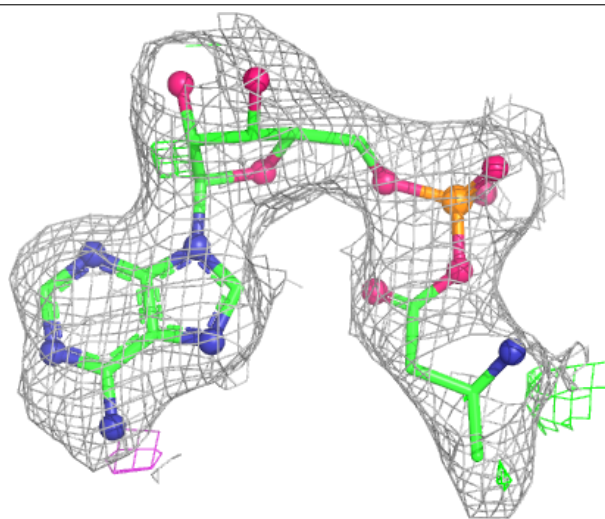
median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
2	6L1	A	601	29/29	0.96	0.08	20,31,39,48	0
2	6L1	B	601	29/29	0.96	0.07	22,29,35,42	0
2	6L1	C	601	29/29	0.96	0.08	21,28,37,47	0
2	6L1	D	601	29/29	0.96	0.08	23,34,42,44	0
3	CL	A	602	1/1	0.98	0.12	34,34,34,34	0
3	CL	C	602	1/1	0.98	0.10	24,24,24,24	0
3	CL	D	602	1/1	0.98	0.05	33,33,33,33	0
3	CL	B	602	1/1	0.99	0.06	30,30,30,30	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.

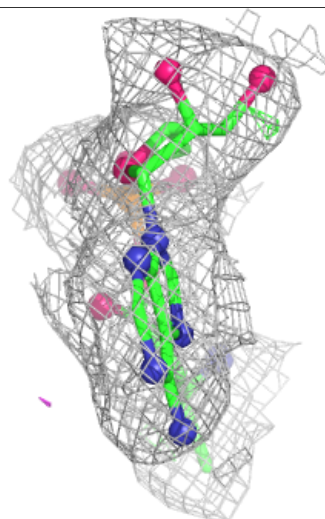
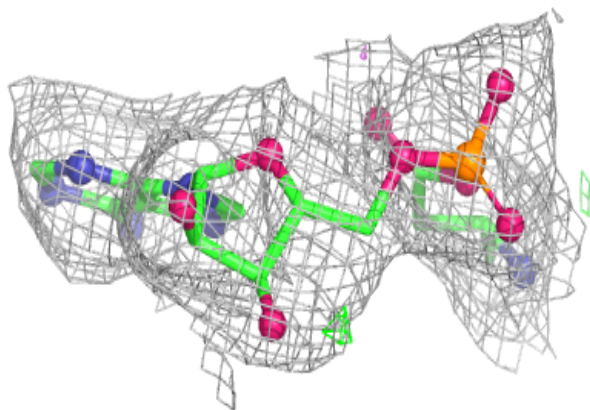
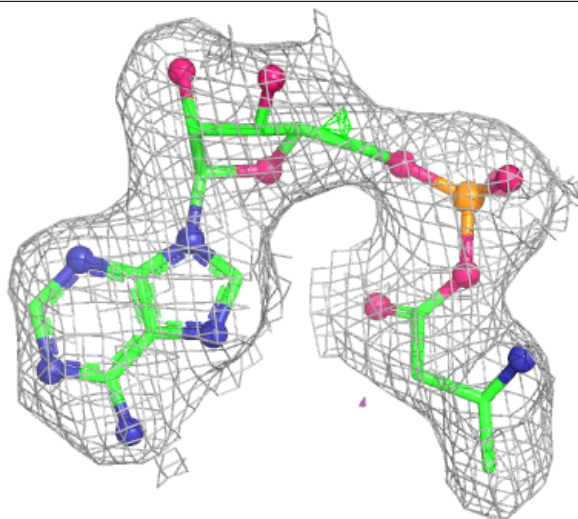
Electron density around 6L1 A 601:

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



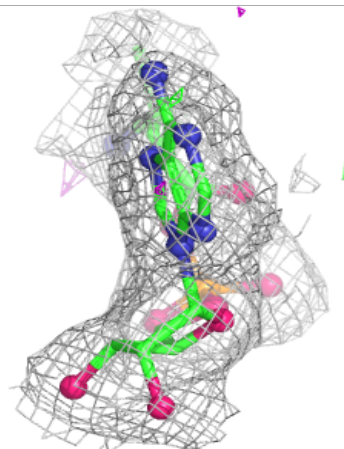
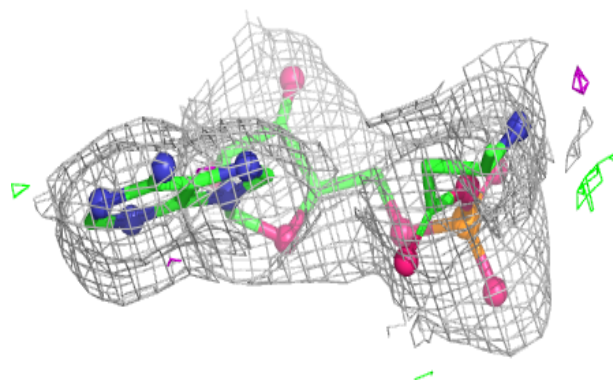
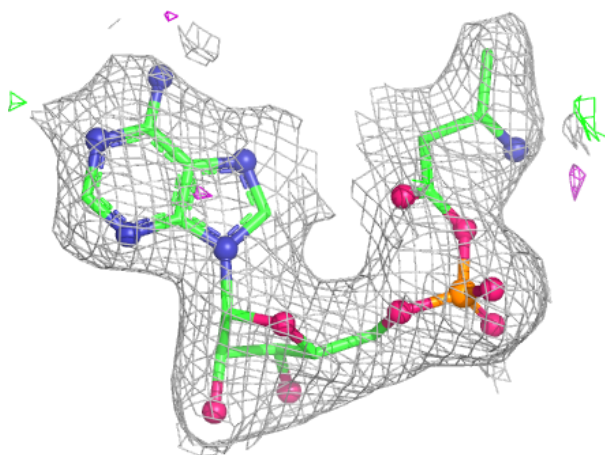
Electron density around 6L1 B 601:

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



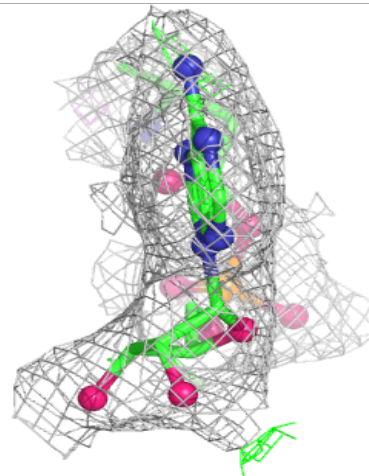
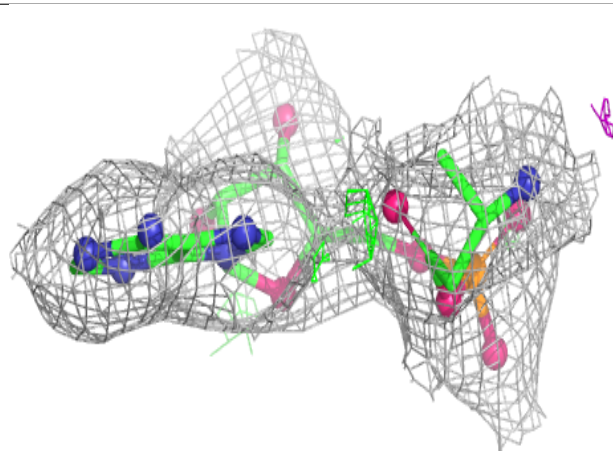
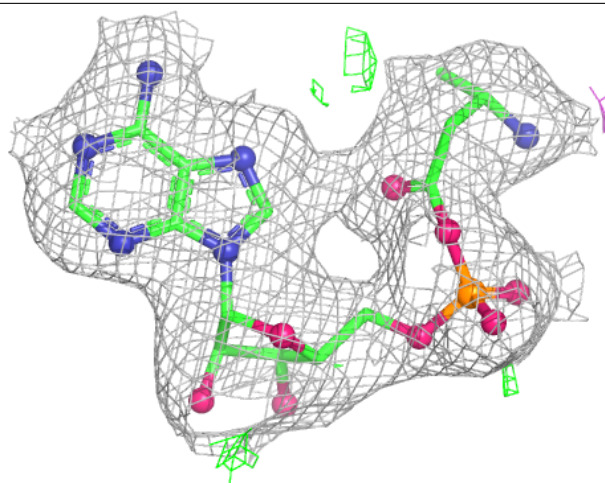
Electron density around 6L1 C 601:

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



Electron density around 6L1 D 601:

$2mF_o-DF_c$ (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.