WORLDWIDE PDB

PROTEIN DATA BANK

wwPDB X-ray Structure Validation Summary Report (i)

Feb 20, 2024 – 05:58 AM EST

PDB ID	:	4LRZ
Title	:	Crystal Structure of the E.coli DhaR(N)-DhaL complex
Authors	:	Shi, R.; McDonald, L.; Cygler, M.; Ekiel, I.
Deposited on	:	2013-07-21
Resolution	:	2.32 Å(reported)

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

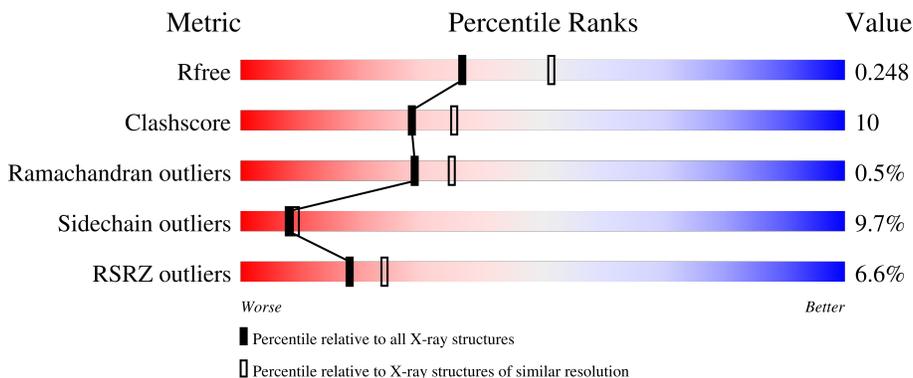|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

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 2.32 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.

Metric	Percentile Ranks	Value
Rfree		0.248
Clashscore		10
Ramachandran outliers		0.5%
Sidechain outliers		9.7%
RSRZ outliers		6.6%

Worse   *Better*

▌ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	5974 (2.34-2.30)
Clashscore	141614	6604 (2.34-2.30)
Ramachandran outliers	138981	6523 (2.34-2.30)
Sidechain outliers	138945	6523 (2.34-2.30)
RSRZ outliers	127900	5855 (2.34-2.30)

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	211	5% / 83% / 15% / •
1	B	211	5% / 85% / 14% / •
1	C	211	5% / 85% / 12% / •
1	D	211	5% / 88% / 10% / •
2	E	318	9% / 68% / 20% / 5% / 8%

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Mol	Chain	Length	Quality of chain
2	F	318	8% 71% 17% 8%
2	G	318	5% 71% 18% 8%
2	H	318	7% 70% 16% 8%

2 Entry composition ⓘ

There are 5 unique types of molecules in this entry. The entry contains 15955 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 PTS-dependent dihydroxyacetone kinase, ADP-binding subunit DhaL.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	211	Total	C	N	O	S	0	0	0
			1584	982	277	314	11			
1	B	211	Total	C	N	O	S	0	0	0
			1584	982	277	314	11			
1	C	211	Total	C	N	O	S	0	0	0
			1584	982	277	314	11			
1	D	211	Total	C	N	O	S	0	0	0
			1584	982	277	314	11			

There are 8 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	0	GLY	-	expression tag	UNP P76014
A	1	SER	-	expression tag	UNP P76014
B	0	GLY	-	expression tag	UNP P76014
B	1	SER	-	expression tag	UNP P76014
C	0	GLY	-	expression tag	UNP P76014
C	1	SER	-	expression tag	UNP P76014
D	0	GLY	-	expression tag	UNP P76014
D	1	SER	-	expression tag	UNP P76014

- Molecule 2 is a protein called PTS-dependent dihydroxyacetone kinase operon regulatory protein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	E	294	Total	C	N	O	S	0	2	0
			2275	1442	394	427	12			
2	F	294	Total	C	N	O	S	0	1	0
			2269	1438	393	426	12			
2	G	294	Total	C	N	O	S	0	2	0
			2275	1442	393	428	12			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	H	291	2239	1421	386	420	12	0	0	0

- Molecule 3 is ADENOSINE-5'-DIPHOSPHATE (three-letter code: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$).
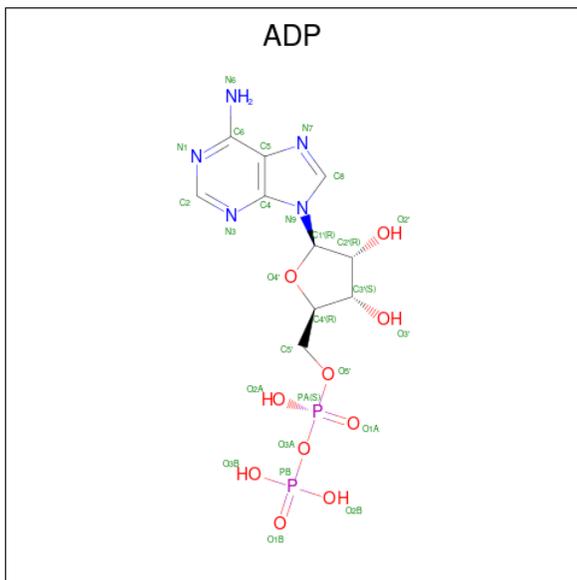
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	N	O	P		
3	A	1	27	10	5	10	2	0	0
3	B	1	Total	C	N	O	P	0	0
			27	10	5	10	2		
3	C	1	Total	C	N	O	P	0	0
			27	10	5	10	2		
3	D	1	Total	C	N	O	P	0	0
			27	10	5	10	2		

- Molecule 4 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Mg		
4	A	2	2	2	0	0
4	B	2	Total	Mg	0	0
			2	2		
4	C	2	Total	Mg	0	0
			2	2		
4	D	2	Total	Mg	0	0
			2	2		

- Molecule 5 is water.

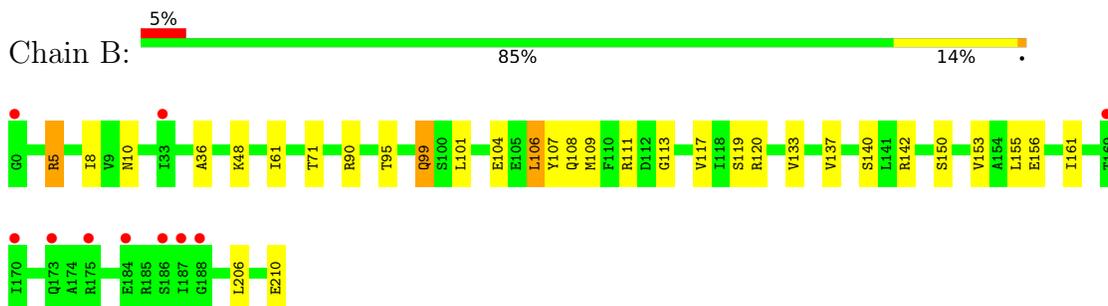| Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	58	Total 58	O 58	0	0
5	B	47	Total 47	O 47	0	0
5	C	59	Total 59	O 59	0	0
5	D	49	Total 49	O 49	0	0
5	E	59	Total 59	O 59	0	0
5	F	51	Total 51	O 51	0	0
5	G	60	Total 60	O 60	0	0
5	H	62	Total 62	O 62	0	0

3 Residue-property plots ⓘ

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density (RSRZ > 2). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.
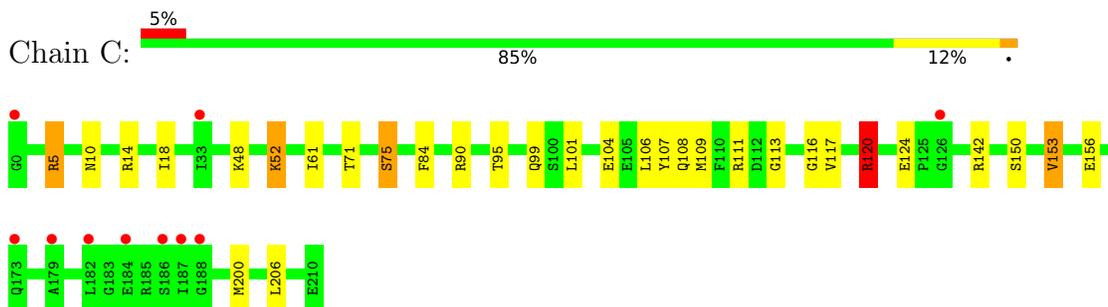
- Molecule 1: PTS-dependent dihydroxyacetone kinase, ADP-binding subunit DhaL

Chain A:

- Molecule 1: PTS-dependent dihydroxyacetone kinase, ADP-binding subunit DhaL
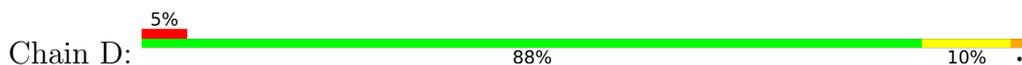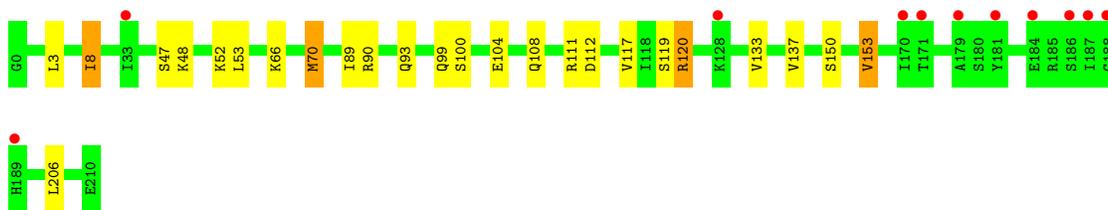
Chain B:

- Molecule 1: PTS-dependent dihydroxyacetone kinase, ADP-binding subunit DhaL

Chain C:

- Molecule 1: PTS-dependent dihydroxyacetone kinase, ADP-binding subunit DhaL
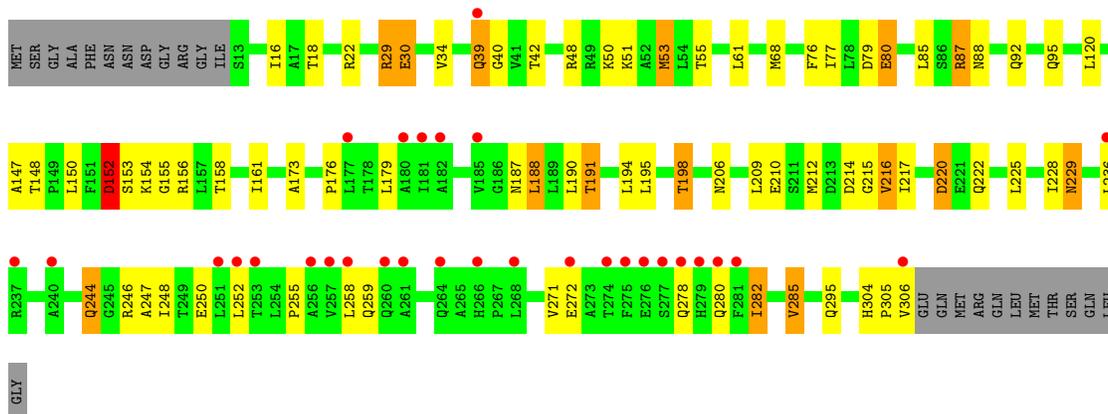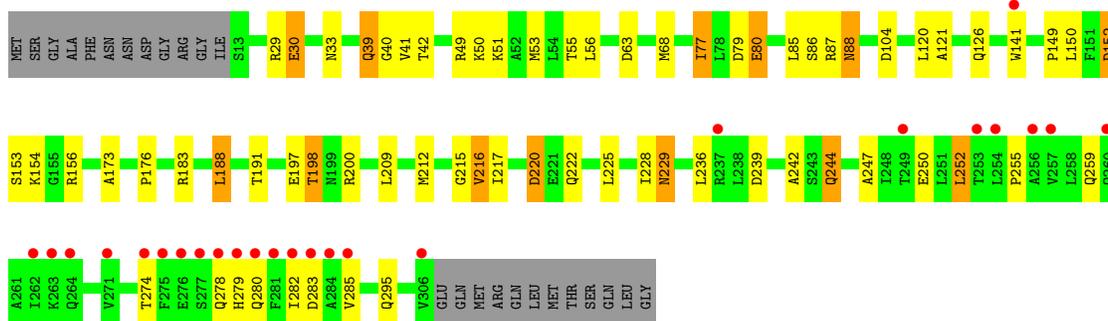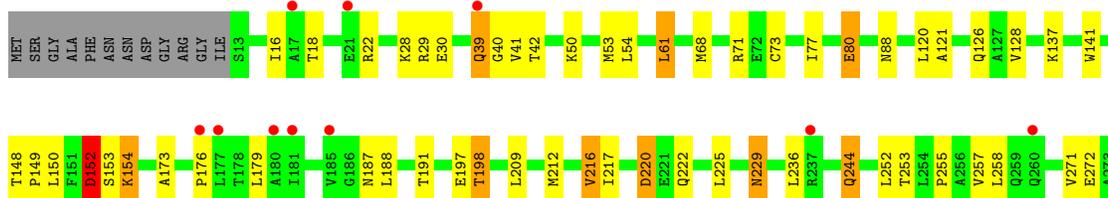
Chain D:

G0 L3 I8 I33 S47 K48 K52 L53 K66 M70 I89 R90 Q93 Q99 S100 E104 Q108 R111 D112 V117 I118 S119 R120 K128 V133 V137 S150 V153 I170 T171 A179 S180 Y181 E184 R185 S186 I187 G188

H189 L206 E210

• Molecule 2: PTS-dependent dihydroxyacetone kinase operon regulatory protein

9%

Chain E: 68%   20%   5%   8%

MET SER GLY ALA PHE ASN ASN ASP GLY ARG GLY ILE S13 I16 A17 T18 R22 R29 E30 V34 Q39 G40 V41 T42 T55 R48 R49 K50 K51 A52 M53 L54 T55 L61 M68 F76 I77 L78 D79 E80 L85 S86 R87 N88 Q92 Q95 L120

A147 T148 P149 L150 F151 D152 S153 K154 G155 R156 L157 T158 I161 A173 P176 L177 T178 L179 A180 I181 A182 V185 G186 N187 L188 L189 L190 T191 L194 L195 T198 N206 L209 E210 S211 M212 D213 D214 G215 V216 I217 D220 E221 Q222 L225 I228 N229 L236

R237 A240 Q244 G245 R246 A247 I248 T249 E250 L251 L252 T253 L254 P255 A256 V257 L258 Q259 Q260 A261 Q264 A265 H266 P267 L268 V271 E272 A273 T274 F275 E276 S277 Q278 H279 Q280 F281 I282 V285 Q295 H304 P305 V306 GLU GLN MET ARG GLN LEU MET THR SER GLN LEU

GLY

• Molecule 2: PTS-dependent dihydroxyacetone kinase operon regulatory protein

8%

Chain F: 71%   17%   •   8%

MET SER GLY ALA PHE ASN ASN ASP GLY ARG GLY ILE S13 R29 E30 N33 Q39 G40 V41 T42 R49 K50 K51 A52 M53 L54 T55 L56 D63 M68 I77 L78 D79 E80 L85 S86 R87 N88 D104 L120 A121 Q126 W141 P149 L150 F151 D152

S153 K154 G155 R156 A173 P176 R183 L188 T191 E197 T198 N199 R200 L209 M212 G215 V216 I217 D220 E221 Q222 L225 I228 N229 L236 R237 L238 D239 A242 S243 Q244 A247 I248 T249 E250 L251 L252 T253 L254 P255 A256 V257 L258 Q259 Q260

A261 I262 K263 Q264 V271 T274 F275 E276 S277 Q278 H279 Q280 F281 I282 D283 A284 V285 Q295 V306 GLU GLN MET ARG GLN LEU MET THR SER GLN LEU GLY

• Molecule 2: PTS-dependent dihydroxyacetone kinase operon regulatory protein

5%

Chain G: 71%   18%   •   8%

MET SER GLY ALA PHE ASN ASN ASP GLY ARG GLY ILE S13 I16 A17 T18 E21 R22 K28 R29 E30 Q39 G40 V41 T42 K50 M53 L54 L61 M68 R71 E72 C73 I77 E80 N88 L120 A121 Q126 A127 V128 K137 W141

T148 P149 L150 F151 D152 S153 K154 A173 P176 L177 T178 L179 A180 I181 V185 G186 N187 L188 T191 E197 T198 L209 M212 V216 I217 D220 E221 Q222 L225 N229 L236 R237 Q244 L252 T253 L254 P255 A256 V257 L258 Q259 Q260 V271 E272 A273

• Molecule 2: PTS-dependent dihydroxyacetone kinase operon regulatory protein

Chain H:

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α, β, γ	89.77Å 91.50Å 93.81Å 84.15° 72.42° 90.01°	Depositor
Resolution (Å)	90.91 – 2.32 45.49 – 2.32	Depositor EDS
% Data completeness (in resolution range)	97.3 (90.91-2.32) 97.3 (45.49-2.32)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$<I/\sigma(I)>$ [1]	2.45 (at 2.32Å)	Xtriage
Refinement program	REFMAC	Depositor
R, R_{free}	0.200 , 0.247 0.200 , 0.248	Depositor DCC
R_{free} test set	6008 reflections (5.04%)	wwPDB-VP
Wilson B-factor (Å^2)	40.7	Xtriage
Anisotropy	0.422	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.35 , 41.7	EDS
L-test for twinning[2]	$<|L|> = 0.51$, $<L^2> = 0.34$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	15955	wwPDB-VP
Average B, all atoms (Å^2)	45.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 6.00% of the height of the origin peak. No significant pseudotranslation is detected.*

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[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: MG, ADP

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	0.82	0/1606	0.83	1/2163 (0.0%)
1	B	0.85	1/1606 (0.1%)	0.83	0/2163
1	C	0.85	0/1606	0.86	2/2163 (0.1%)
1	D	0.81	0/1606	0.78	1/2163 (0.0%)
2	E	0.79	1/2323 (0.0%)	0.85	4/3163 (0.1%)
2	F	0.80	1/2314 (0.0%)	0.84	1/3151 (0.0%)
2	G	0.84	3/2323 (0.1%)	0.88	3/3163 (0.1%)
2	H	0.84	0/2279	0.87	4/3102 (0.1%)
All	All	0.82	6/15663 (0.0%)	0.85	16/21231 (0.1%)

The worst 5 of 6 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	F	197	GLU	CG-CD	5.69	1.60	1.51
2	G	220	ASP	CB-CG	-5.68	1.39	1.51
2	E	153	SER	CB-OG	5.35	1.49	1.42
1	B	36	ALA	CA-CB	5.31	1.63	1.52
2	G	197	GLU	CB-CG	5.22	1.62	1.52

The worst 5 of 16 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	G	220	ASP	CB-CG-OD2	-11.56	107.90	118.30
2	G	152	ASP	CB-CG-OD1	-7.76	111.31	118.30
2	H	152	ASP	CB-CG-OD1	-7.38	111.66	118.30
2	E	87	ARG	NE-CZ-NH2	-7.20	116.70	120.30
1	C	120	ARG	NE-CZ-NH1	6.61	123.60	120.30

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1584	0	1577	28	0
1	B	1584	0	1577	23	0
1	C	1584	0	1577	21	0
1	D	1584	0	1577	16	0
2	E	2275	0	2294	79	0
2	F	2269	0	2286	57	0
2	G	2275	0	2292	56	0
2	H	2239	0	2259	64	0
3	A	27	0	12	0	0
3	B	27	0	12	0	0
3	C	27	0	12	0	0
3	D	27	0	12	0	0
4	A	2	0	0	0	0
4	B	2	0	0	0	0
4	C	2	0	0	0	0
4	D	2	0	0	0	0
5	A	58	0	0	4	0
5	B	47	0	0	4	0
5	C	59	0	0	2	0
5	D	49	0	0	3	0
5	E	59	0	0	8	0
5	F	51	0	0	3	0
5	G	60	0	0	6	0
5	H	62	0	0	5	0
All	All	15955	0	15487	305	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 10.

The worst 5 of 305 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)
2:E:209:LEU:HA	2:E:212:MET:HE1	1.18	1.12
2:E:209:LEU:HA	2:E:212:MET:CE	1.79	1.12
2:H:212:MET:HE3	2:H:216:VAL:CG1	1.83	1.08

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:209:LEU:HD23	2:G:212:MET:HE2	1.37	1.06
2:G:212:MET:HE1	2:G:216:VAL:CG1	1.86	1.04

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	209/211 (99%)	205 (98%)	4 (2%)	0	100	100
1	B	209/211 (99%)	203 (97%)	6 (3%)	0	100	100
1	C	209/211 (99%)	205 (98%)	4 (2%)	0	100	100
1	D	209/211 (99%)	205 (98%)	4 (2%)	0	100	100
2	E	294/318 (92%)	284 (97%)	8 (3%)	2 (1%)	22	26
2	F	293/318 (92%)	284 (97%)	6 (2%)	3 (1%)	15	17
2	G	294/318 (92%)	285 (97%)	6 (2%)	3 (1%)	15	17
2	H	287/318 (90%)	280 (98%)	6 (2%)	1 (0%)	41	50
All	All	2004/2116 (95%)	1951 (97%)	44 (2%)	9 (0%)	29	41

5 of 9 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	E	152	ASP
2	F	152	ASP
2	G	152	ASP
2	H	152	ASP
2	E	40	GLY

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	169/169 (100%)	157 (93%)	12 (7%)	14	19
1	B	169/169 (100%)	159 (94%)	10 (6%)	19	26
1	C	169/169 (100%)	157 (93%)	12 (7%)	14	19
1	D	169/169 (100%)	158 (94%)	11 (6%)	17	22
2	E	243/260 (94%)	218 (90%)	25 (10%)	7	8
2	F	242/260 (93%)	214 (88%)	28 (12%)	5	5
2	G	243/260 (94%)	212 (87%)	31 (13%)	4	4
2	H	238/260 (92%)	209 (88%)	29 (12%)	5	5
All	All	1642/1716 (96%)	1484 (90%)	158 (10%)	8	9

5 of 158 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	G	216	VAL
2	H	154	LYS
2	G	252	LEU
2	H	30	GLU
2	H	244	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 43 such sidechains are listed below:

Mol	Chain	Res	Type
2	F	39	GLN
2	G	126	GLN
2	F	88	ASN
2	F	244	GLN
2	G	229	ASN

5.3.3 RNA (i)

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 monosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 12 ligands modelled in this entry, 8 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	$\#|Z| > 2$
3	ADP	C	300	4	24,29,29	0.96	1 (4%)	29,45,45	1.42	7 (24%)
3	ADP	D	300	4	24,29,29	0.98	0	29,45,45	1.42	4 (13%)
3	ADP	B	300	4	24,29,29	0.95	1 (4%)	29,45,45	1.61	6 (20%)
3	ADP	A	300	4	24,29,29	1.00	1 (4%)	29,45,45	1.50	6 (20%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	ADP	C	300	4	-	0/12/32/32	0/3/3/3
3	ADP	D	300	4	-	0/12/32/32	0/3/3/3
3	ADP	B	300	4	-	0/12/32/32	0/3/3/3
3	ADP	A	300	4	-	0/12/32/32	0/3/3/3

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	C	300	ADP	O4'-C1'	2.41	1.44	1.41
3	B	300	ADP	C5-C4	2.12	1.46	1.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	300	ADP	C5-C4	2.01	1.46	1.40

The worst 5 of 23 bond angle outliers are listed below:

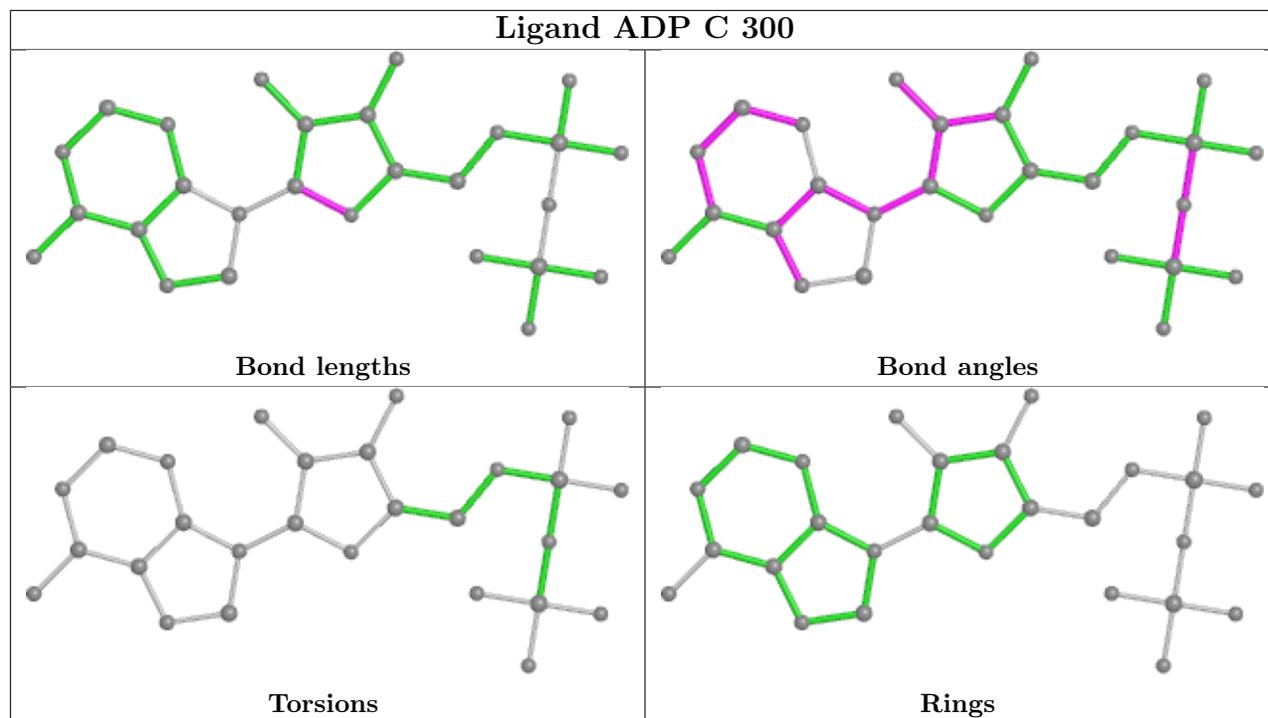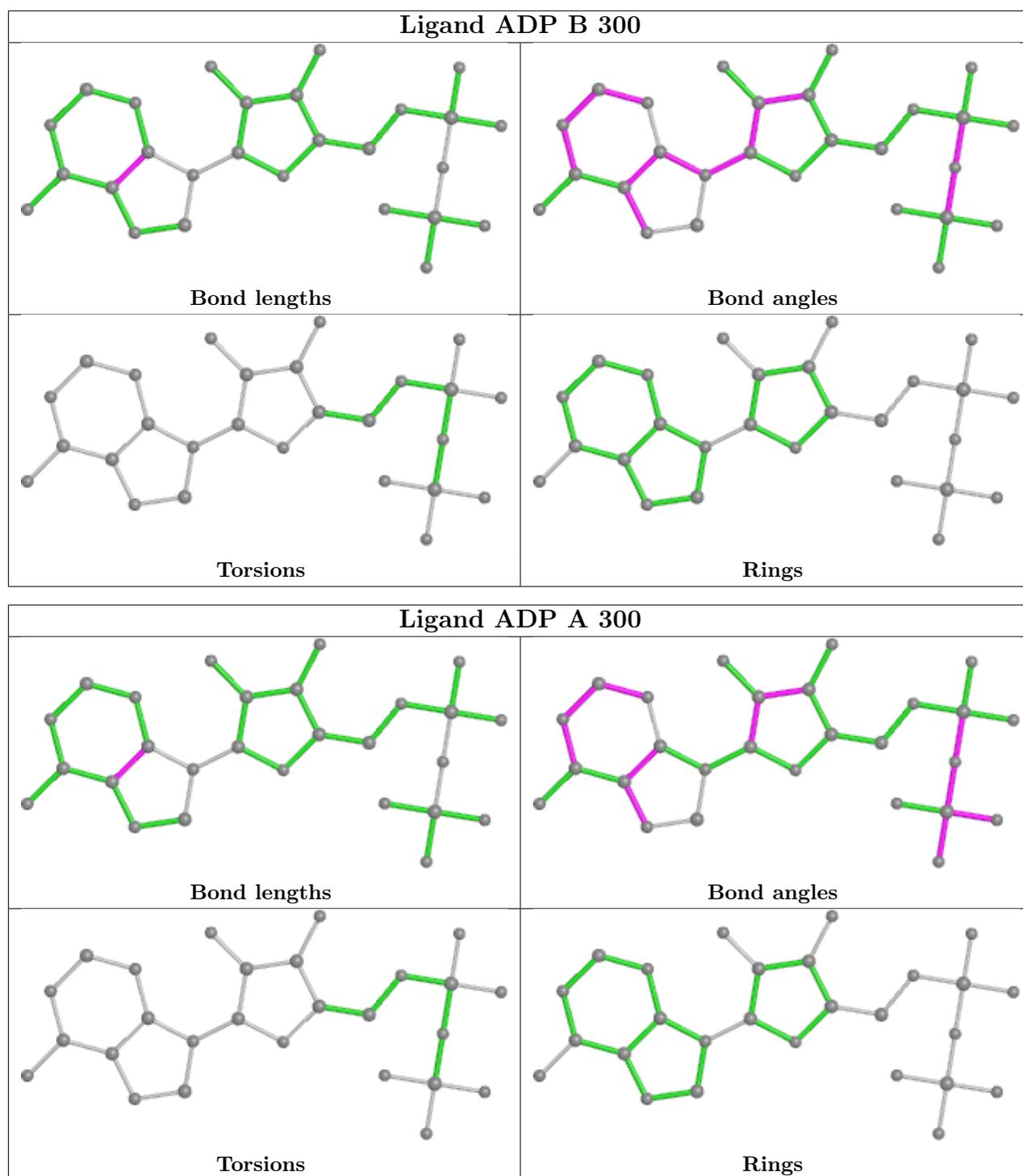| Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	D	300	ADP	N3-C2-N1	-3.79	122.75	128.68
3	B	300	ADP	N3-C2-N1	-3.77	122.79	128.68
3	A	300	ADP	N3-C2-N1	-3.64	122.98	128.68
3	C	300	ADP	N3-C2-N1	-3.33	123.47	128.68
3	A	300	ADP	C3'-C2'-C1'	3.20	105.80	100.98

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

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 ADP C 300

Bond lengths

Bond angles

Torsions

Rings

Ligand ADP D 300

Bond lengths

Bond angles

Torsions

Rings

Ligand ADP B 300

Bond lengths

Bond angles

Torsions

Rings

Ligand ADP A 300

Bond lengths

Bond angles

Torsions

Rings
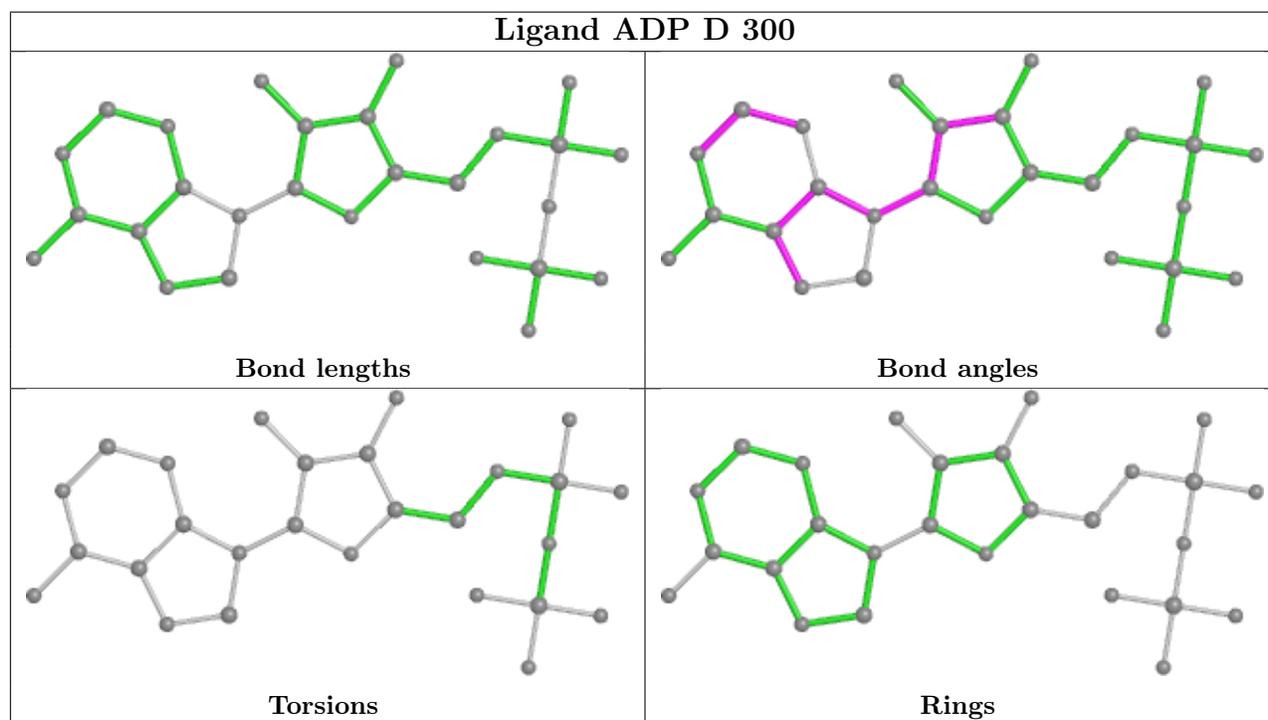
5.7 Other polymers ⓘ

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(Å²)	Q<0.9
1	A	211/211 (100%)	0.29	10 (4%)	31	38	28, 39, 57, 69	0
1	B	211/211 (100%)	0.20	10 (4%)	31	38	28, 40, 56, 66	0
1	C	211/211 (100%)	0.25	10 (4%)	31	38	28, 39, 57, 68	0
1	D	211/211 (100%)	0.18	11 (5%)	27	34	28, 39, 56, 69	0
2	E	294/318 (92%)	0.59	30 (10%)	6	10	27, 45, 89, 116	0
2	F	294/318 (92%)	0.57	25 (8%)	10	15	29, 45, 89, 119	0
2	G	294/318 (92%)	0.34	15 (5%)	28	35	28, 44, 74, 97	0
2	H	291/318 (91%)	0.52	22 (7%)	13	18	29, 45, 79, 115	0
All	All	2017/2116 (95%)	0.39	133 (6%)	18	24	27, 42, 77, 119	0

The worst 5 of 133 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	F	281	PHE	7.2
2	E	277	SER	7.1
2	H	281	PHE	6.9
2	F	277	SER	6.5
2	F	279	HIS	6.2

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

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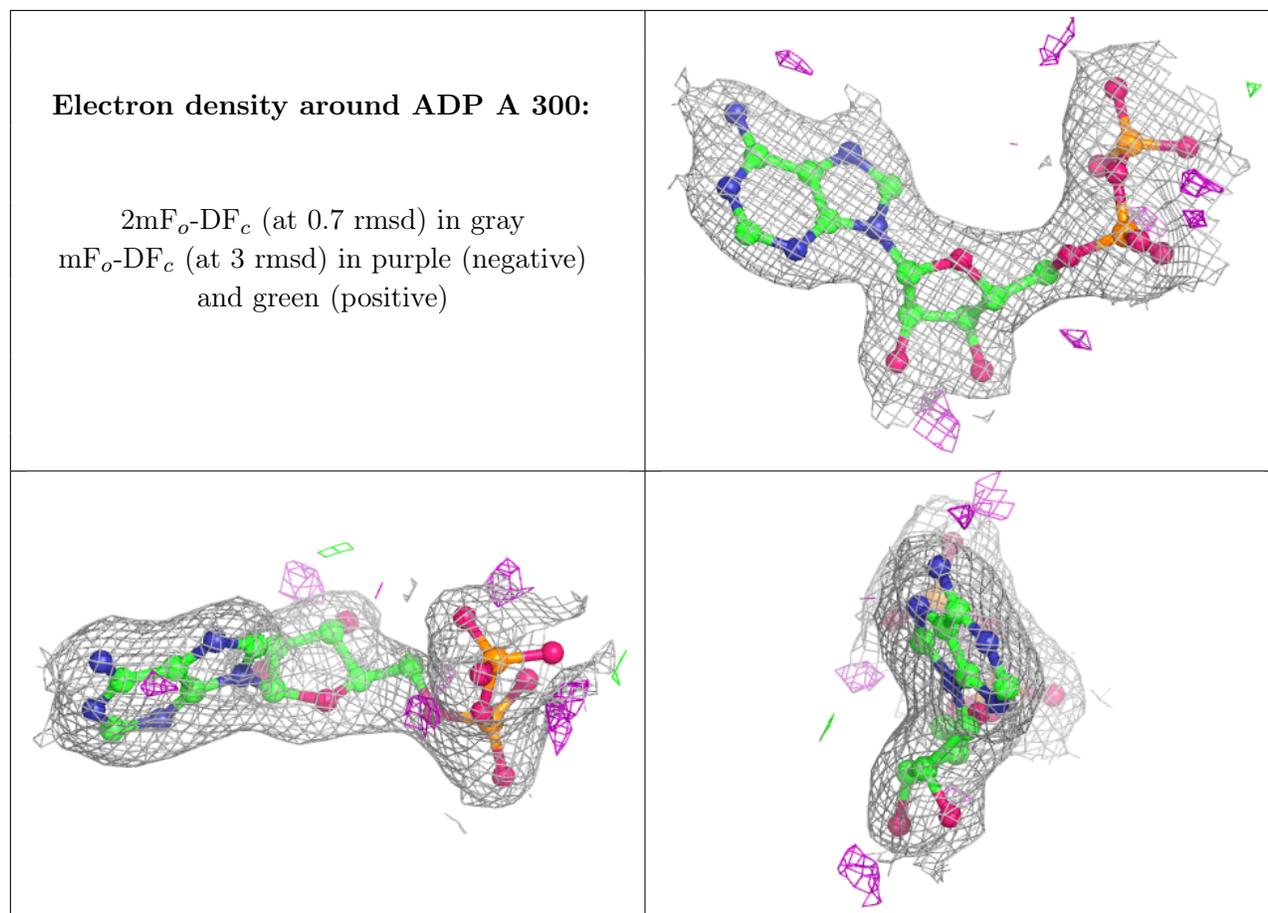
6.3   Carbohydrates ⓘ

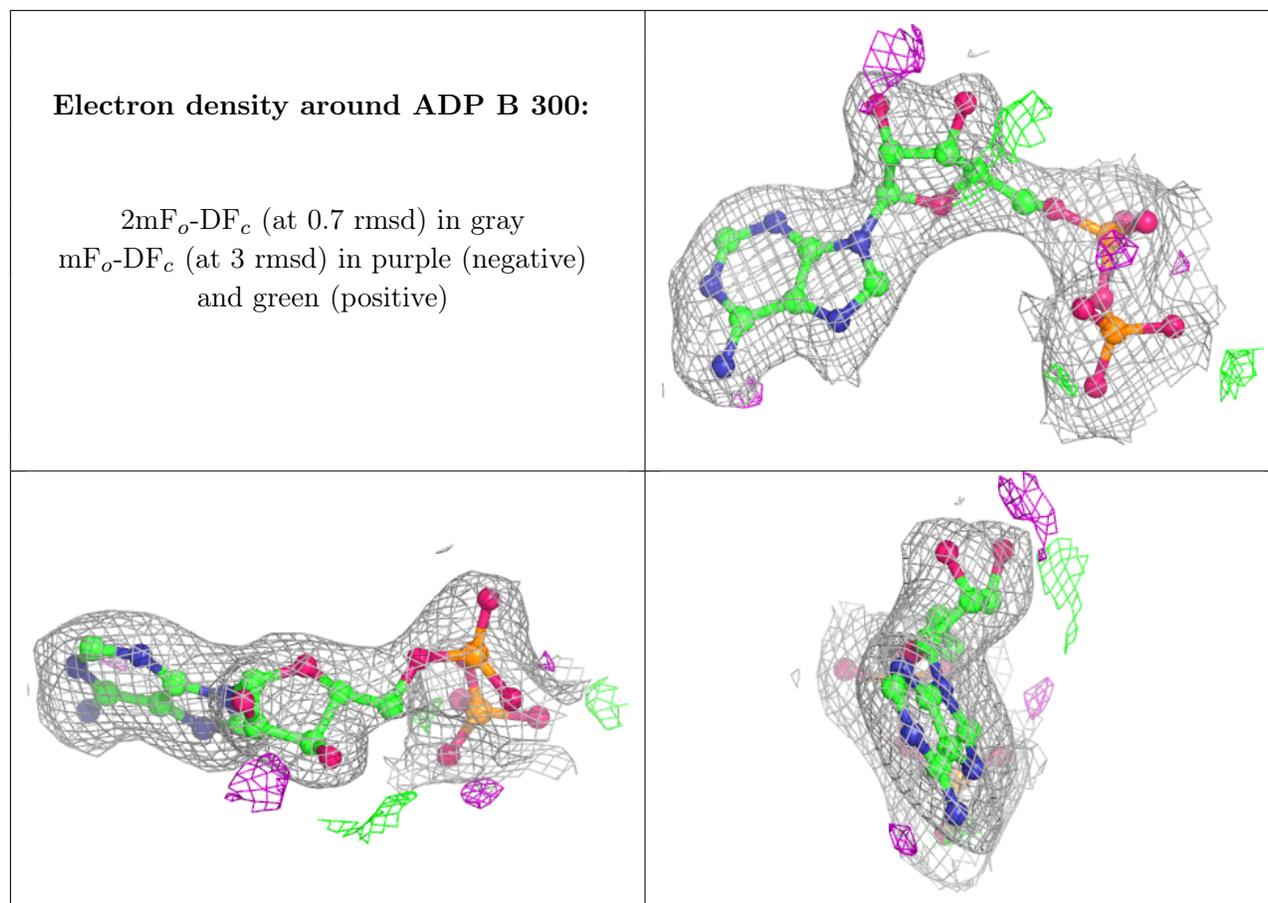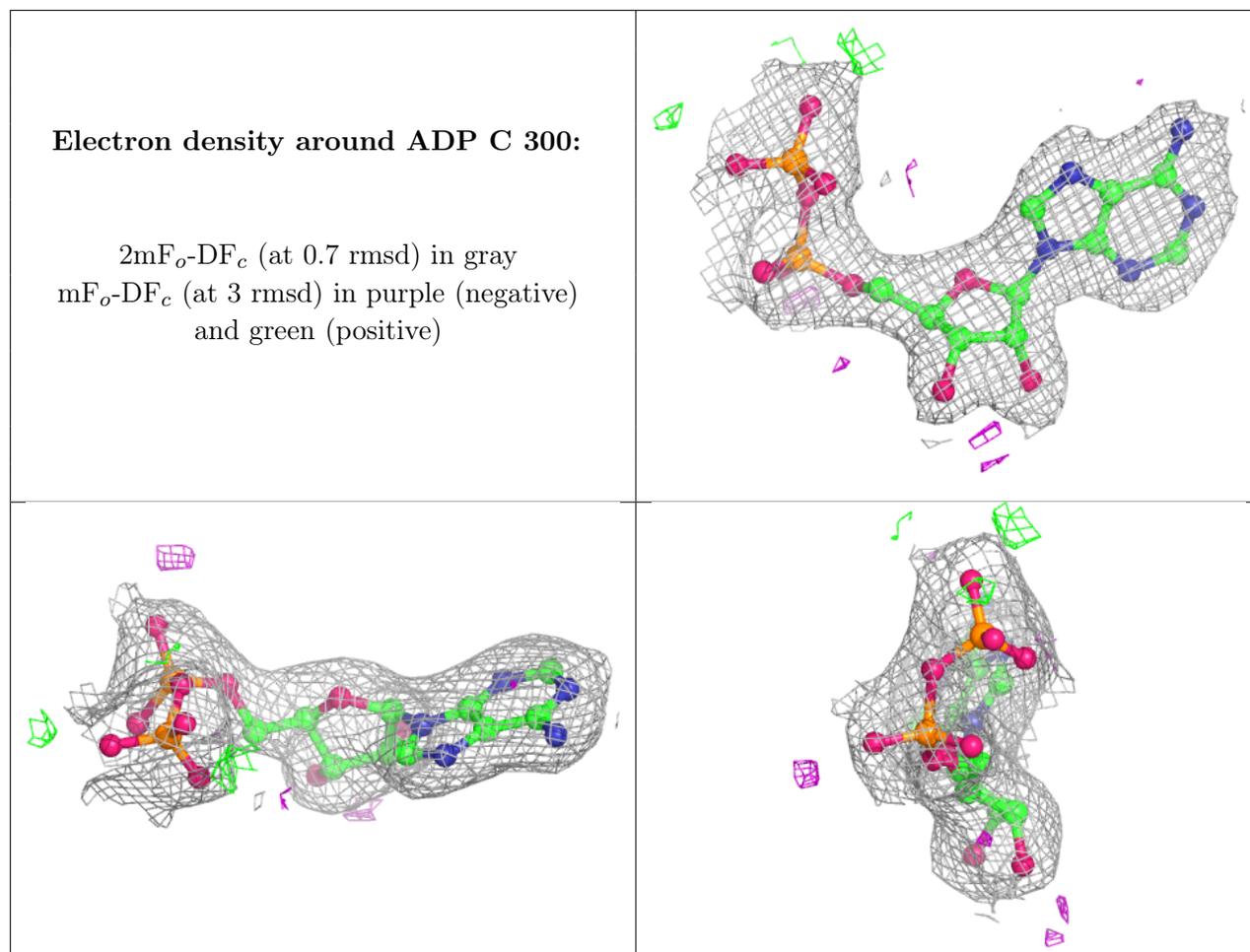There are no monosaccharides in this entry.

6.4 Ligands ⓘ

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.
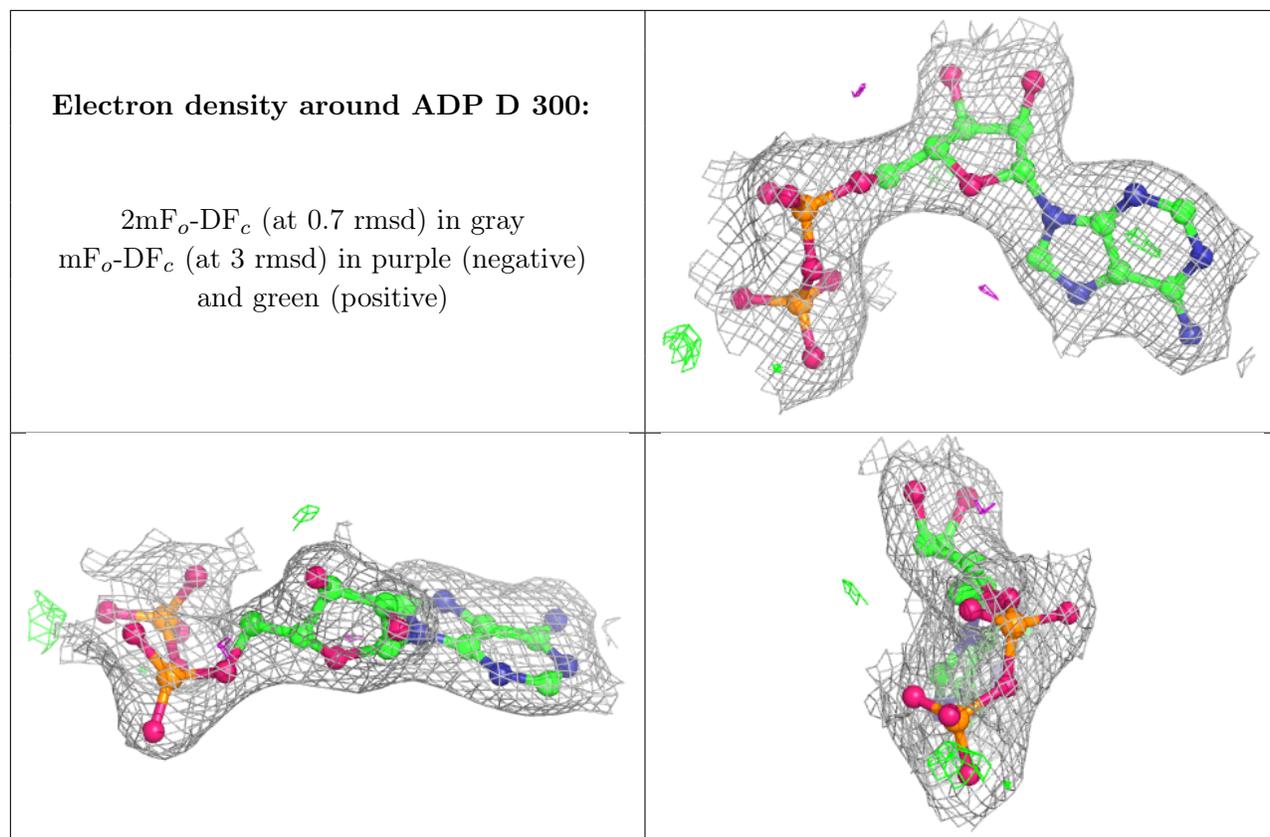
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
4	MG	B	302	1/1	0.81	0.17	36,36,36,36	0
4	MG	D	301	1/1	0.91	0.06	35,35,35,35	0
4	MG	D	302	1/1	0.92	0.21	39,39,39,39	0
4	MG	A	302	1/1	0.93	0.13	36,36,36,36	0
4	MG	A	301	1/1	0.93	0.05	35,35,35,35	0
4	MG	C	302	1/1	0.94	0.15	40,40,40,40	0
4	MG	C	301	1/1	0.96	0.07	34,34,34,34	0
4	MG	B	301	1/1	0.96	0.06	34,34,34,34	0
3	ADP	A	300	27/27	0.98	0.14	29,36,39,40	0
3	ADP	B	300	27/27	0.98	0.15	32,34,38,40	0
3	ADP	C	300	27/27	0.98	0.13	32,35,38,38	0
3	ADP	D	300	27/27	0.98	0.14	31,36,39,41	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 ADP A 300:

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

Electron density around ADP B 300:

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

Electron density around ADP C 300:

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

Electron density around ADP D 300:

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

6.5 Other polymers (i)

There are no such residues in this entry.