Full wwPDB X-ray Structure Validation Report (i)

Oct 14, 2023 – 08:29 PM EDT

PDB ID	:	7U9K
Title	:	Staphylococcus aureus D-alanine-D-alanine ligase in complex with ATP, D-ala-D-ala, Mg2+ and K+
Authors	:	Pederick, J.L.; Bruning, J.B.
Deposited on	:	2022-03-10
Resolution	:	2.00 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 (i) symbol.

The types of validation reports are described at
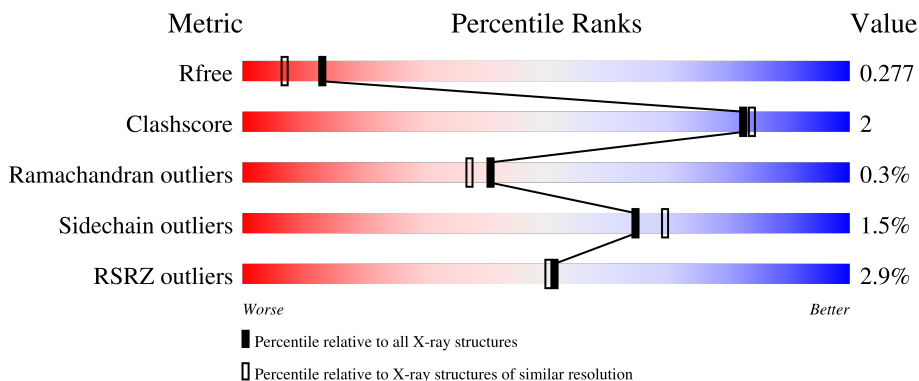http://www.wwpdb.org/validation/2017/FAQs#types.

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 2.00 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		0.277
Clashscore		2
Ramachandran outliers		0.3%
Sidechain outliers		1.5%
RSRZ outliers		2.9%

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	8085 (2.00-2.00)
Clashscore	141614	9178 (2.00-2.00)
Ramachandran outliers	138981	9054 (2.00-2.00)
Sidechain outliers	138945	9053 (2.00-2.00)
RSRZ outliers	127900	7900 (2.00-2.00)

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	364	2% / 85% / 6% / 9%
1	B	364	3% / 83% / 7% · / 9%
2	F	2	50% / 50%

2 Entry composition ⓘ

There are 7 unique types of molecules in this entry. The entry contains 5487 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 D-alanine–D-alanine ligase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	332	Total 2568	C 1631	N 426	O 502	S 9	0	0	0
1	B	330	Total 2562	C 1638	N 417	O 498	S 9	0	0	0

There are 16 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	357	ARG	-	expression tag	UNP Q2FWH3
A	358	SER	-	expression tag	UNP Q2FWH3
A	359	HIS	-	expression tag	UNP Q2FWH3
A	360	HIS	-	expression tag	UNP Q2FWH3
A	361	HIS	-	expression tag	UNP Q2FWH3
A	362	HIS	-	expression tag	UNP Q2FWH3
A	363	HIS	-	expression tag	UNP Q2FWH3
A	364	HIS	-	expression tag	UNP Q2FWH3
B	357	ARG	-	expression tag	UNP Q2FWH3
B	358	SER	-	expression tag	UNP Q2FWH3
B	359	HIS	-	expression tag	UNP Q2FWH3
B	360	HIS	-	expression tag	UNP Q2FWH3
B	361	HIS	-	expression tag	UNP Q2FWH3
B	362	HIS	-	expression tag	UNP Q2FWH3
B	363	HIS	-	expression tag	UNP Q2FWH3
B	364	HIS	-	expression tag	UNP Q2FWH3

- Molecule 2 is a protein (with D amino acids) called DAL-DAL.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
2	F	2	Total 11	C 6	N 2	O 3	0	0	0

- Molecule 3 is POTASSIUM ION (three-letter code: K) (formula: K) (labeled as "Ligand of

Interest" by depositor).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	1	Total 1	K 1	0	0
3	B	3	Total 3	K 3	0	0

- Molecule 4 is MAGNESIUM ION (three-letter code: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).
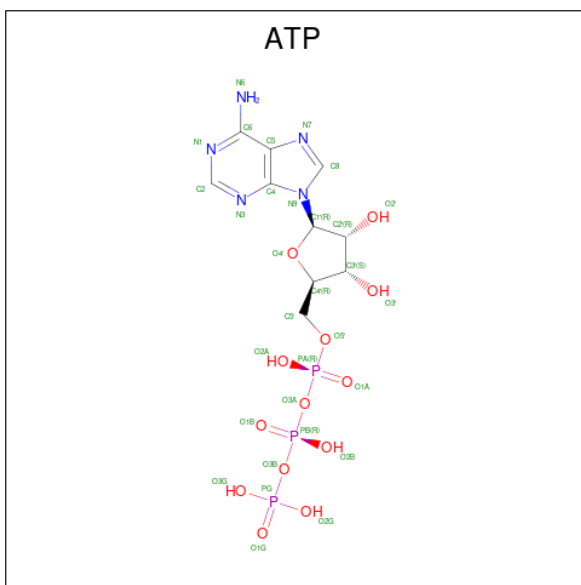
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	1	Total 1	Mg 1	0	0
4	B	1	Total 1	Mg 1	0	0

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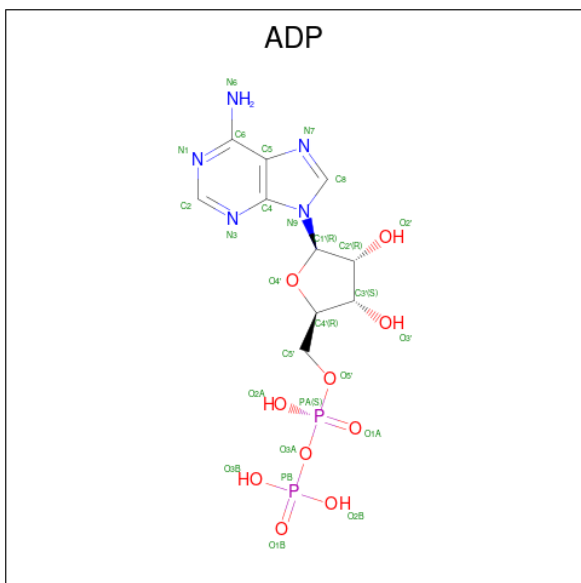
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
5	A	1	Total 27	C 10	N 5	O 10	P 2	0	0

- Molecule 6 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$) (labeled as "Ligand of Interest" by depositor).

ATP

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
6	B	1	Total 31	C 10	N 5	O 13	P 3	0	0

- Molecule 7 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	A	169	Total 169	O 169	0	0
7	B	112	Total 112	O 112	0	0
7	F	1	Total 1	O 1	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: D-alanine–D-alanine ligase

Chain A:

• Molecule 1: D-alanine–D-alanine ligase

Chain B:

• Molecule 2: DAL-DAL

Chain F:
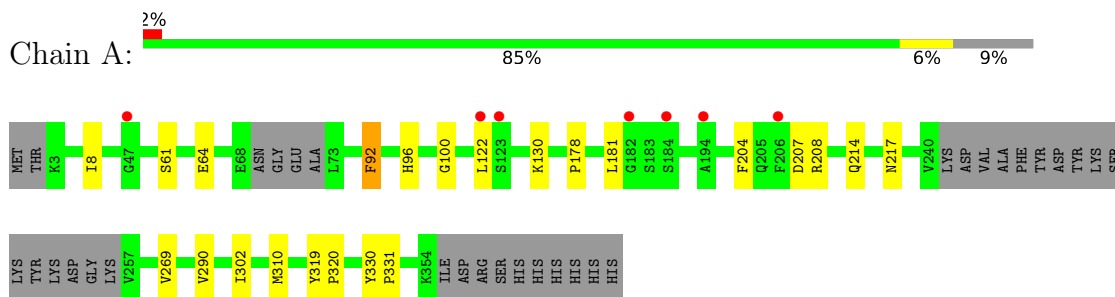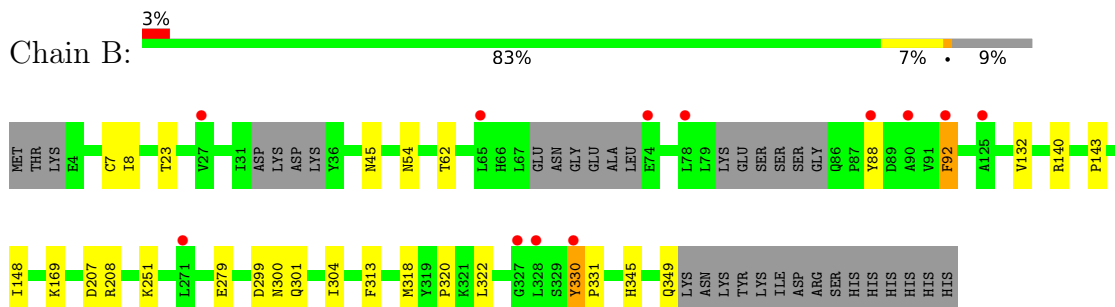
4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	52.45Å 70.06Å 91.60Å 90.00° 102.58° 90.00°	Depositor
Resolution (Å)	37.68 – 2.00 37.68 – 2.00	Depositor EDS
% Data completeness (in resolution range)	99.8 (37.68-2.00) 98.4 (37.68-2.00)	Depositor EDS
R_{merge}	0.22	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.67 (at 2.00Å)	Xtriage
Refinement program	PHENIX 1.18.2-3874	Depositor
R, R_{free}	0.239 , 0.277 0.239 , 0.277	Depositor DCC
R_{free} test set	2160 reflections (4.93%)	wwPDB-VP
Wilson B-factor (Å^2)	27.1	Xtriage
Anisotropy	0.392	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 52.3	EDS
L-test for twinning[2]	$< |L| > = 0.49, < L^2 > = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	5487	wwPDB-VP
Average B, all atoms (Å^2)	32.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.99% 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, K, ADP, ATP, DAL

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	0.23	0/2616	0.40	0/3550
1	B	0.24	0/2613	0.40	0/3550
All	All	0.24	0/5229	0.40	0/7100

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2   Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2568	0	2471	12	0
1	B	2562	0	2446	14	0
2	F	11	0	11	0	0
3	A	1	0	0	0	0
3	B	3	0	0	0	0
4	A	1	0	0	0	0
4	B	1	0	0	0	0
5	A	27	0	12	1	0
6	B	31	0	12	1	0
7	A	169	0	0	1	0
7	B	112	0	0	0	0

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WORLDWIDE
wwPDB
PROTEIN DATA BANK

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
7	F	1	0	0	0	0
All	All	5487	0	4952	25	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 2.

All (25) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:23:THR:HG23	1:B:313:PHE:HB2	1.72	0.71
1:B:148:ILE:HD11	1:B:169:LYS:HD3	1.88	0.56
1:B:8:ILE:HD13	1:B:92:PHE:HB3	1.89	0.55
1:A:269:VAL:HG13	1:A:302:ILE:HD11	1.88	0.54
1:B:251:LYS:NZ	6:B:405:ATP:O1G	2.41	0.53
1:A:207:ASP:OD1	1:A:208:ARG:N	2.45	0.49
1:A:217:ASN:ND2	7:A:508:HOH:O	2.39	0.49
1:A:96:HIS:CE1	1:A:310:MET:HG3	2.48	0.48
1:A:130:LYS:NZ	5:A:403:ADP:O2B	2.44	0.47
1:A:8:ILE:HD13	1:A:92:PHE:HB3	1.98	0.46
1:B:313:PHE:CD2	1:B:320:PRO:HG3	2.52	0.45
1:B:299:ASP:OD2	1:B:301:GLN:NE2	2.40	0.45
1:A:122:LEU:HD21	1:B:132:VAL:HG21	1.99	0.45
1:A:178:PRO:HG2	1:A:181:LEU:HD12	1.98	0.44
1:B:140:ARG:NE	1:B:279:GLU:OE1	2.43	0.44
1:B:207:ASP:OD1	1:B:208:ARG:N	2.50	0.44
1:A:330:TYR:HB3	1:A:331:PRO:HD3	2.02	0.41
1:B:345:HIS:O	1:B:349:GLN:HG2	2.20	0.41
1:A:319:TYR:HB3	1:A:320:PRO:HD3	2.02	0.41
1:B:7:CYS:HB2	1:B:88:TYR:CE1	2.56	0.41
1:A:61:SER:O	1:A:64:GLU:HG2	2.21	0.41
1:B:318:MET:HG2	1:B:322:LEU:HG	2.03	0.41
1:B:330:TYR:HB3	1:B:331:PRO:HD3	2.03	0.41
1:A:204:PHE:HD1	1:A:204:PHE:HA	1.81	0.41
1:B:143:PRO:O	1:B:304:ILE:HG22	2.22	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	326/364 (90%)	318 (98%)	7 (2%)	1 (0%)	41	37
1	B	322/364 (88%)	313 (97%)	8 (2%)	1 (0%)	41	37
All	All	648/728 (89%)	631 (97%)	15 (2%)	2 (0%)	41	37

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	54	ASN
1	A	100	GLY

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	273/319 (86%)	270 (99%)	3 (1%)	73	78
1	B	270/319 (85%)	265 (98%)	5 (2%)	57	61
All	All	543/638 (85%)	535 (98%)	8 (2%)	65	69

All (8) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	92	PHE
1	A	214	GLN
1	A	290	VAL
1	B	45	ASN

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Mol	Chain	Res	Type
1	B	62	THR
1	B	92	PHE
1	B	300	ASN
1	B	330	TYR

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

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

2 non-standard protein/DNA/RNA residues 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	$\#|Z| > 2$
2	DAL	F	1	2	3,4,5	0.64	0	2,4,6	0.79	0
2	DAL	F	2	2	5,5,5	1.15	1 (20%)	6,6,6	1.36	1 (16%)

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	DAL	F	1	2	-	0/0/2/4	-
2	DAL	F	2	2	-	0/4/4/4	-

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	F	2	DAL	OXT-C	-2.11	1.23	1.30

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	F	2	DAL	OXT-C-O	-2.66	118.05	124.09

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 8 ligands modelled in this entry, 6 are monoatomic - leaving 2 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	#$|Z| > 2$
6	ATP	B	405	3,4	26,33,33	0.97	1 (3%)	31,52,52	1.40	5 (16%)
5	ADP	A	403	4	24,29,29	0.97	1 (4%)	29,45,45	1.40	4 (13%)

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
6	ATP	B	405	3,4	-	4/18/38/38	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	ADP	A	403	4	-	1/12/32/32	0/3/3/3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	B	405	ATP	C5-C4	2.53	1.47	1.40
5	A	403	ADP	C5-C4	2.50	1.47	1.40

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
6	B	405	ATP	PB-O3B-PG	-3.40	121.17	132.83
5	A	403	ADP	C3'-C2'-C1'	3.18	105.77	100.98
5	A	403	ADP	N3-C2-N1	-3.14	123.77	128.68
6	B	405	ATP	N3-C2-N1	-3.07	123.88	128.68
5	A	403	ADP	PA-O3A-PB	-2.97	122.62	132.83
6	B	405	ATP	C3'-C2'-C1'	2.89	105.32	100.98
6	B	405	ATP	C4-C5-N7	-2.73	106.56	109.40
5	A	403	ADP	C4-C5-N7	-2.64	106.64	109.40
6	B	405	ATP	PA-O3A-PB	-2.30	124.93	132.83

There are no chirality outliers.

All (5) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	B	405	ATP	C5'-O5'-PA-O3A
6	B	405	ATP	C5'-O5'-PA-O1A
6	B	405	ATP	PB-O3A-PA-O2A
5	A	403	ADP	C5'-O5'-PA-O1A
6	B	405	ATP	C5'-O5'-PA-O2A

There are no ring outliers.

2 monomers are involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	B	405	ATP	1	0
5	A	403	ADP	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will

also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand ATP B 405

Bond lengths

Bond angles

Torsions

Rings

Ligand ADP A 403

Bond lengths

Bond angles

Torsions

Rings
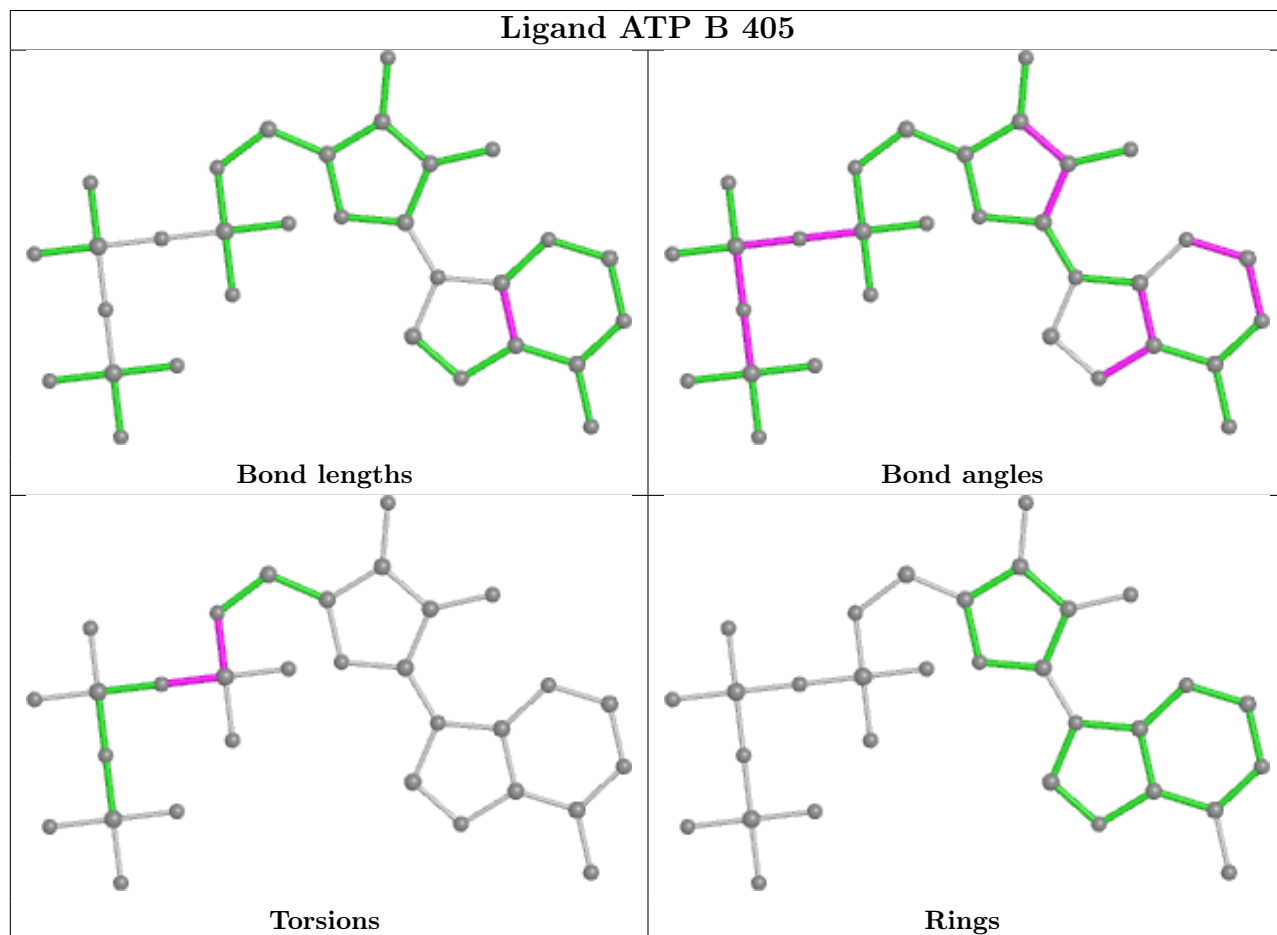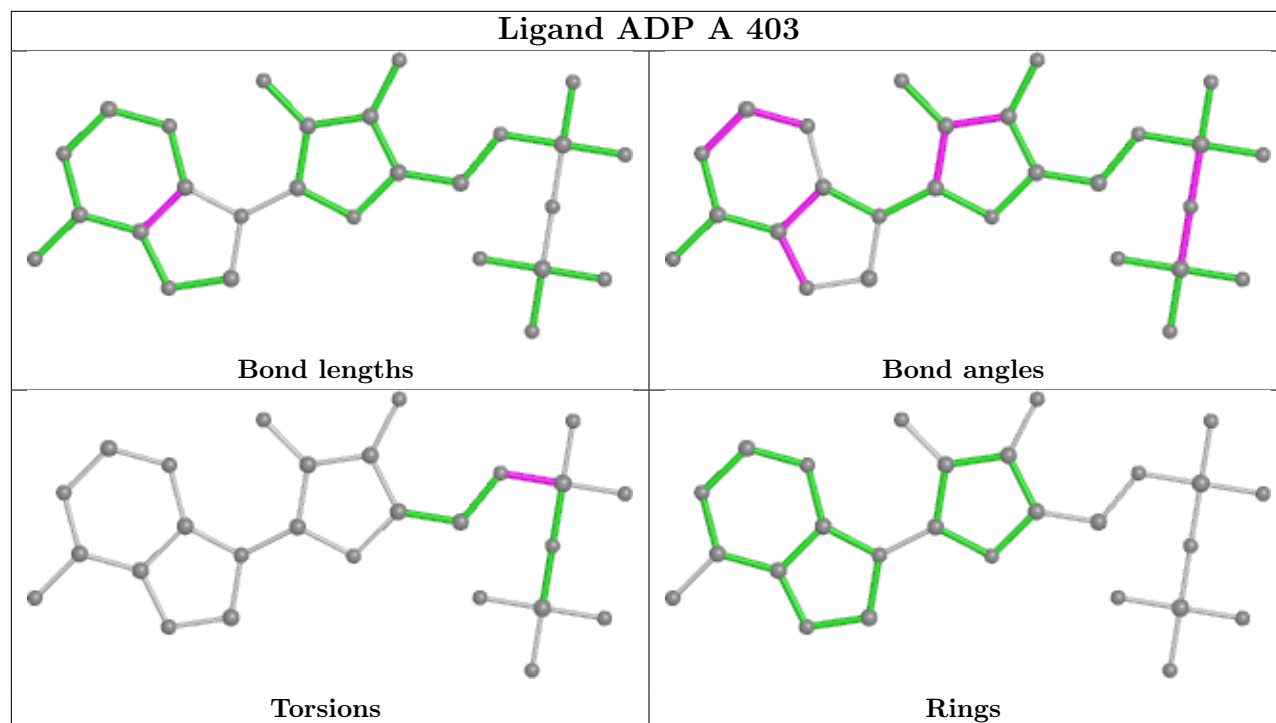
5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 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	332/364 (91%)	0.07	7 (2%) 63	62	17, 28, 48, 56	0
1	B	330/364 (90%)	0.48	12 (3%) 42	42	19, 33, 52, 62	0
2	F	0/2	-	-		-	-
All	All	662/730 (90%)	0.27	19 (2%) 51	50	17, 30, 50, 62	0

All (19) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	328	LEU	3.8
1	B	90	ALA	3.6
1	B	327	GLY	3.5
1	B	271	LEU	3.5
1	B	74	GLU	3.4
1	A	206	PHE	3.1
1	B	78	LEU	3.0
1	B	125	ALA	2.8
1	A	122	LEU	2.7
1	A	182	GLY	2.7
1	B	65	LEU	2.6
1	B	88	TYR	2.6
1	A	184	SER	2.4
1	B	92	PHE	2.3
1	B	27	VAL	2.3
1	A	194	ALA	2.2
1	A	123	SER	2.1
1	A	47	GLY	2.1
1	B	330	TYR	2.1

6.2　Non-standard residues in protein, DNA, RNA chains (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	DAL	F	1	5/6	0.91	0.18	23,24,30,32	0
2	DAL	F	2	6/6	0.93	0.18	28,31,32,32	0

6.3　Carbohydrates (i)

There are no monosaccharides in this entry.

6.4　Ligands (i)

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	K	B	401	1/1	0.85	0.15	29,29,29,29	1
5	ADP	A	403	27/27	0.87	0.12	17,28,45,46	0
6	ATP	B	405	31/31	0.94	0.14	17,25,30,36	0
4	MG	A	402	1/1	0.95	0.05	28,28,28,28	1
3	K	B	402	1/1	0.97	0.13	23,23,23,23	0
3	K	A	401	1/1	0.97	0.06	25,25,25,25	1
3	K	B	403	1/1	0.98	0.08	25,25,25,25	1
4	MG	B	404	1/1	0.98	0.17	19,19,19,19	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 K B 401:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
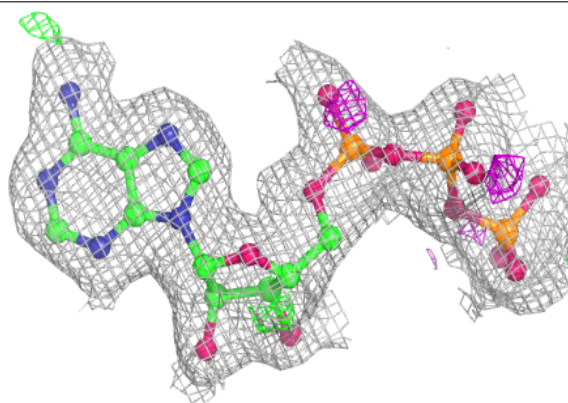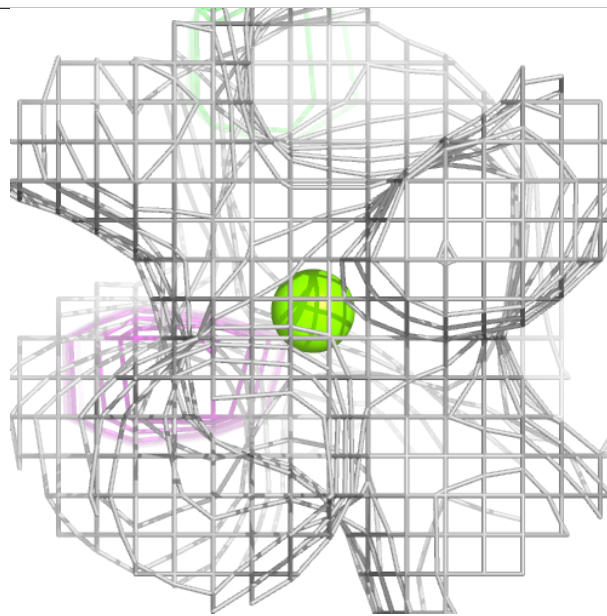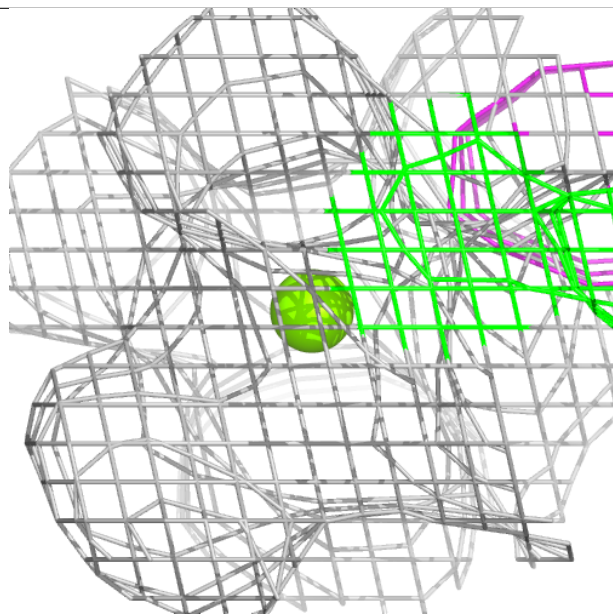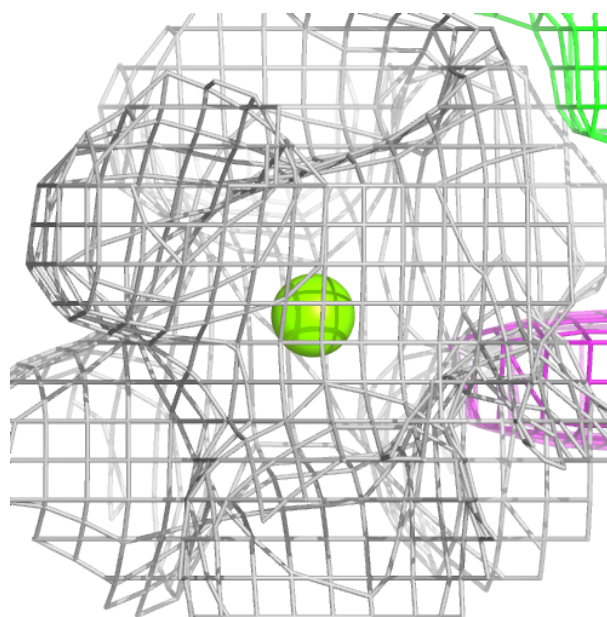mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)
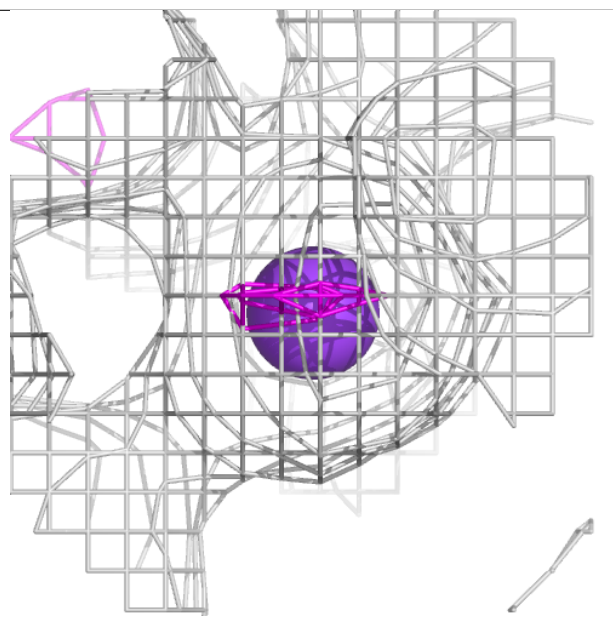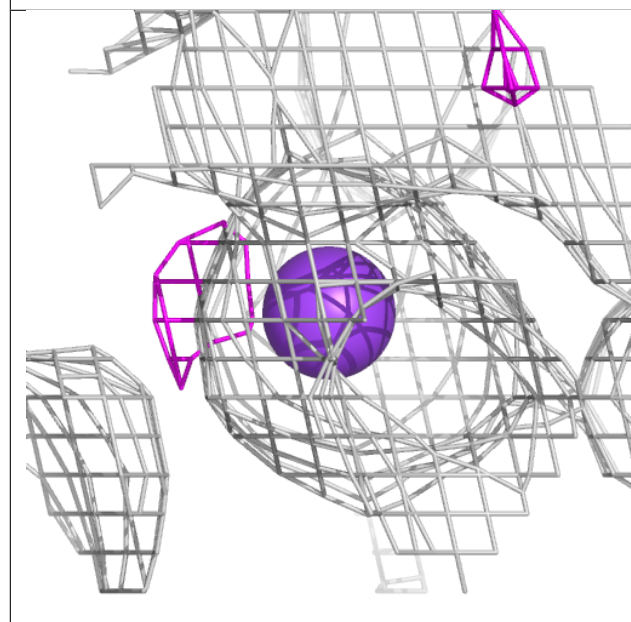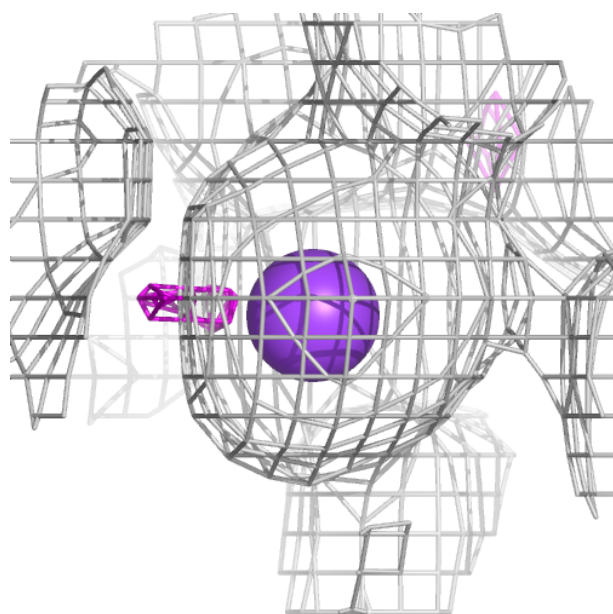
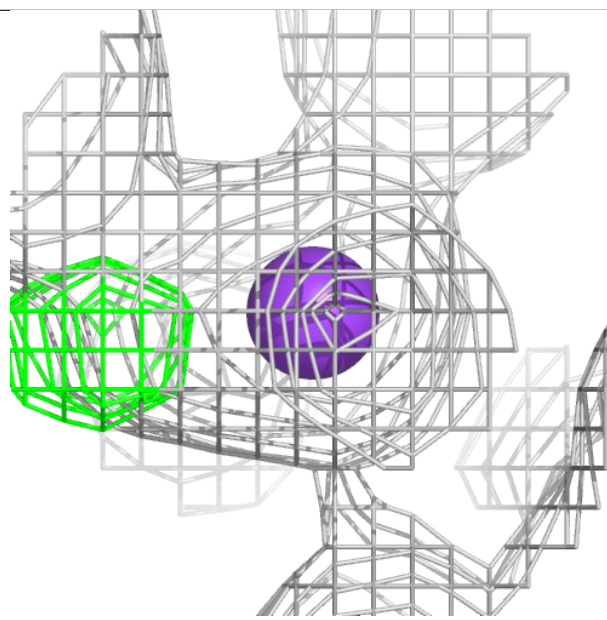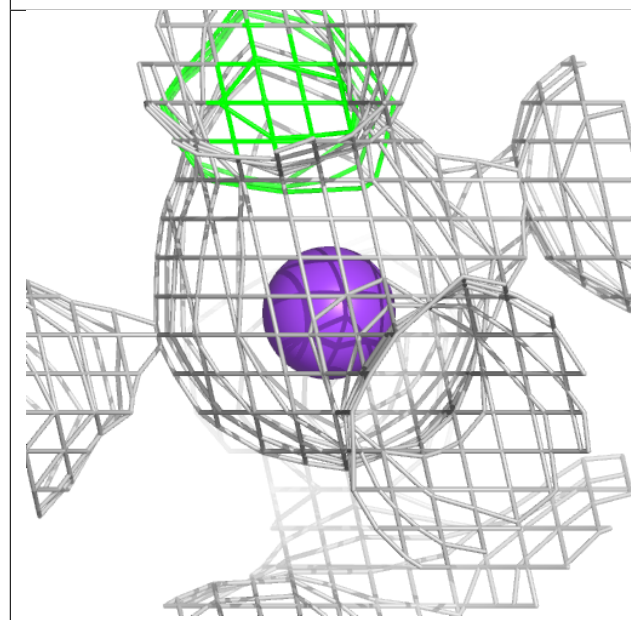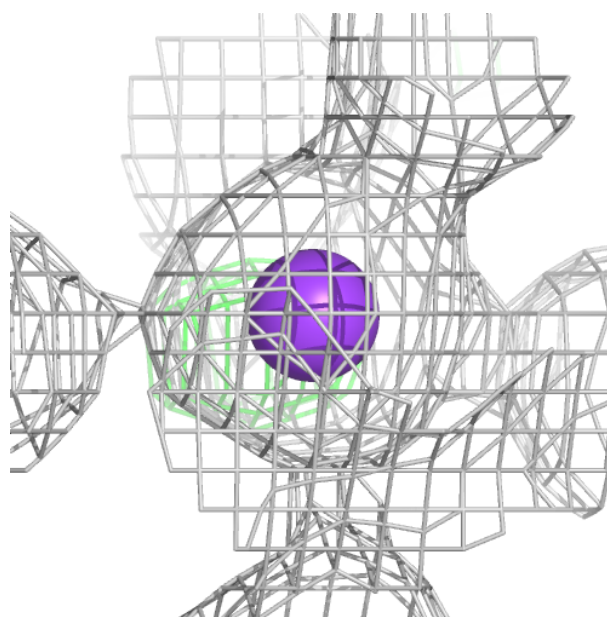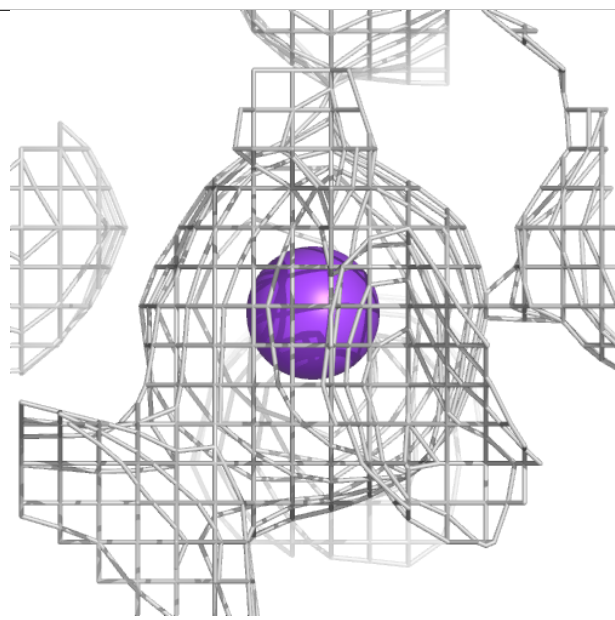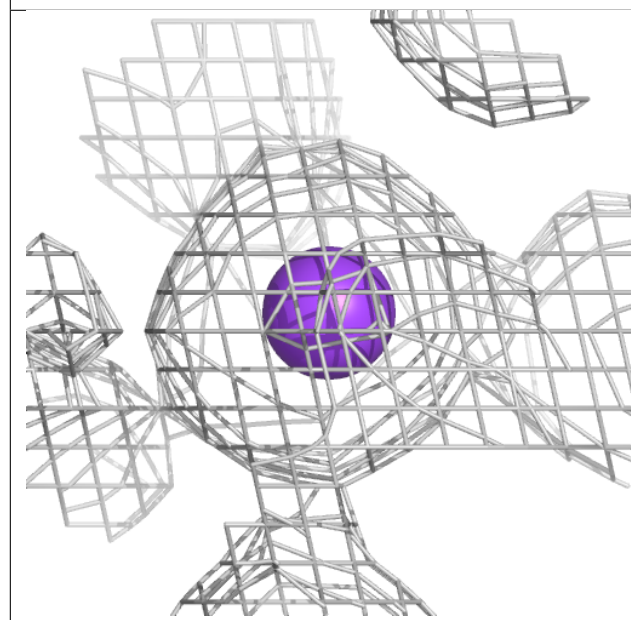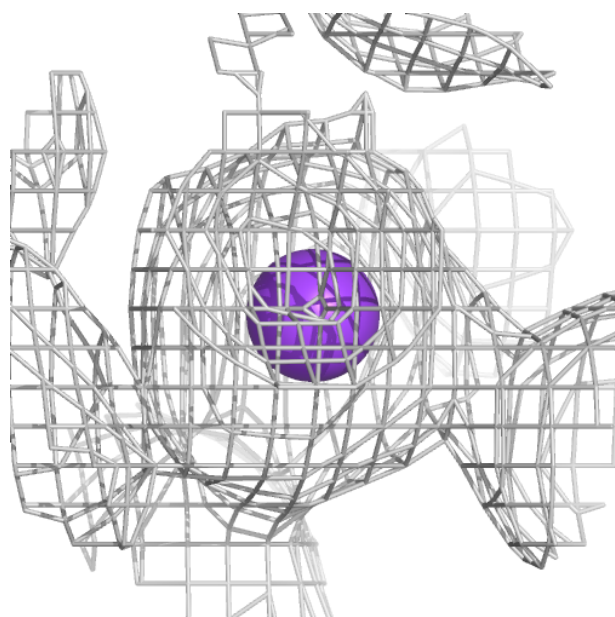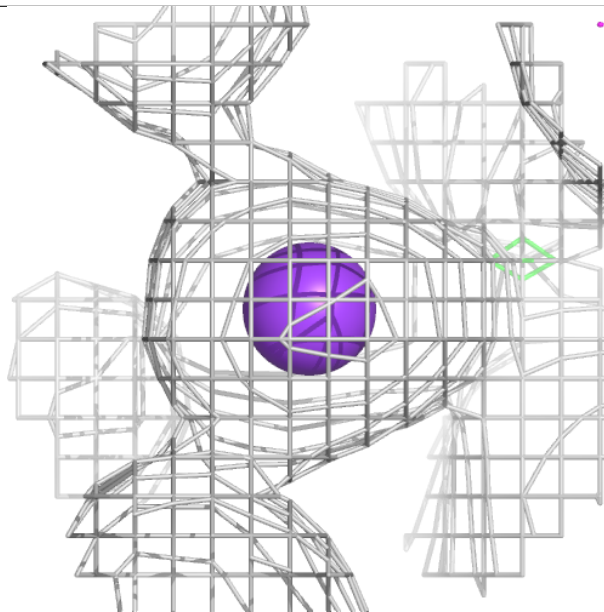**Electron density around ADP A 403:**

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
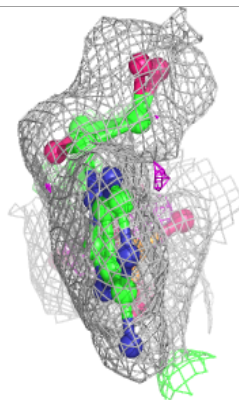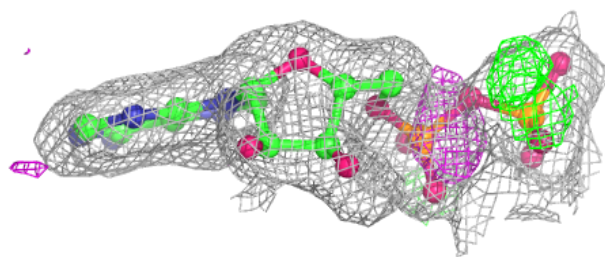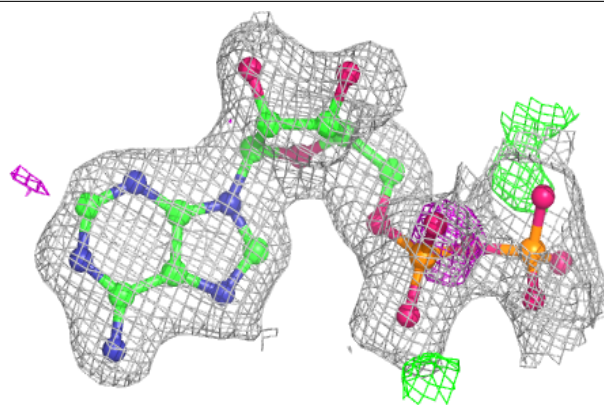
Electron density around ATP B 405:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
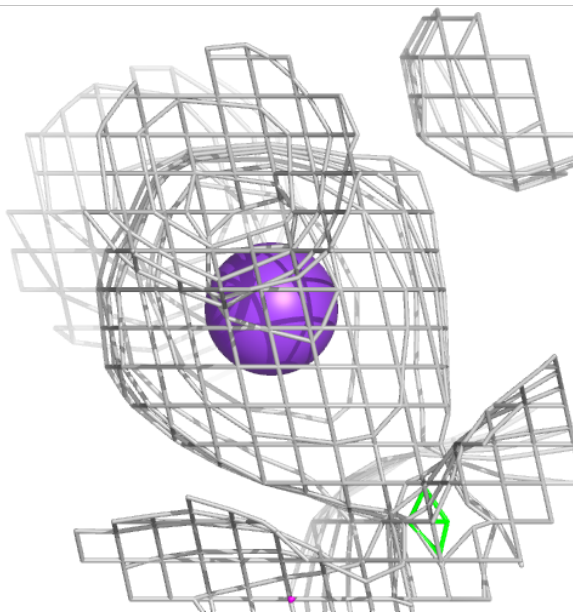and green (positive)
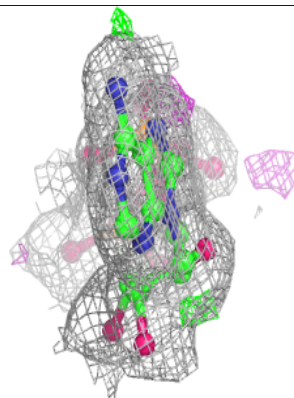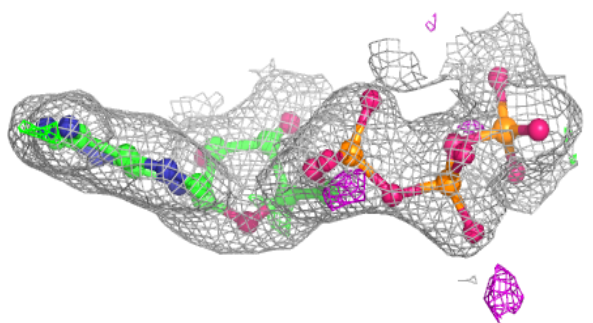
Electron density around MG A 402:

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 K B 402:

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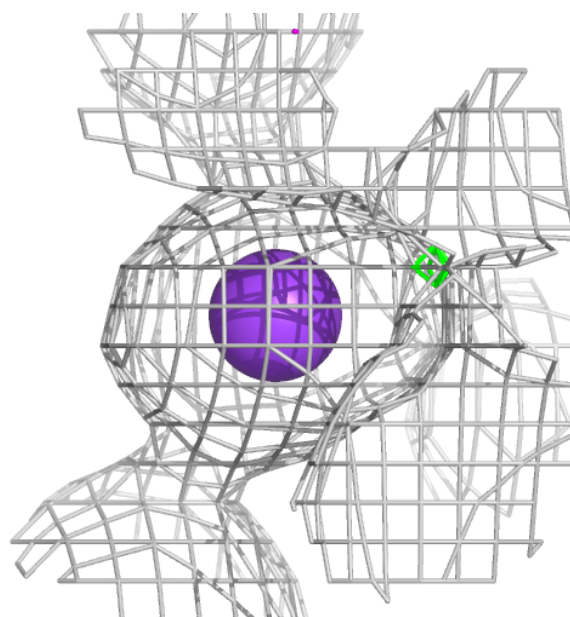and green (positive)

Electron density around K A 401:

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

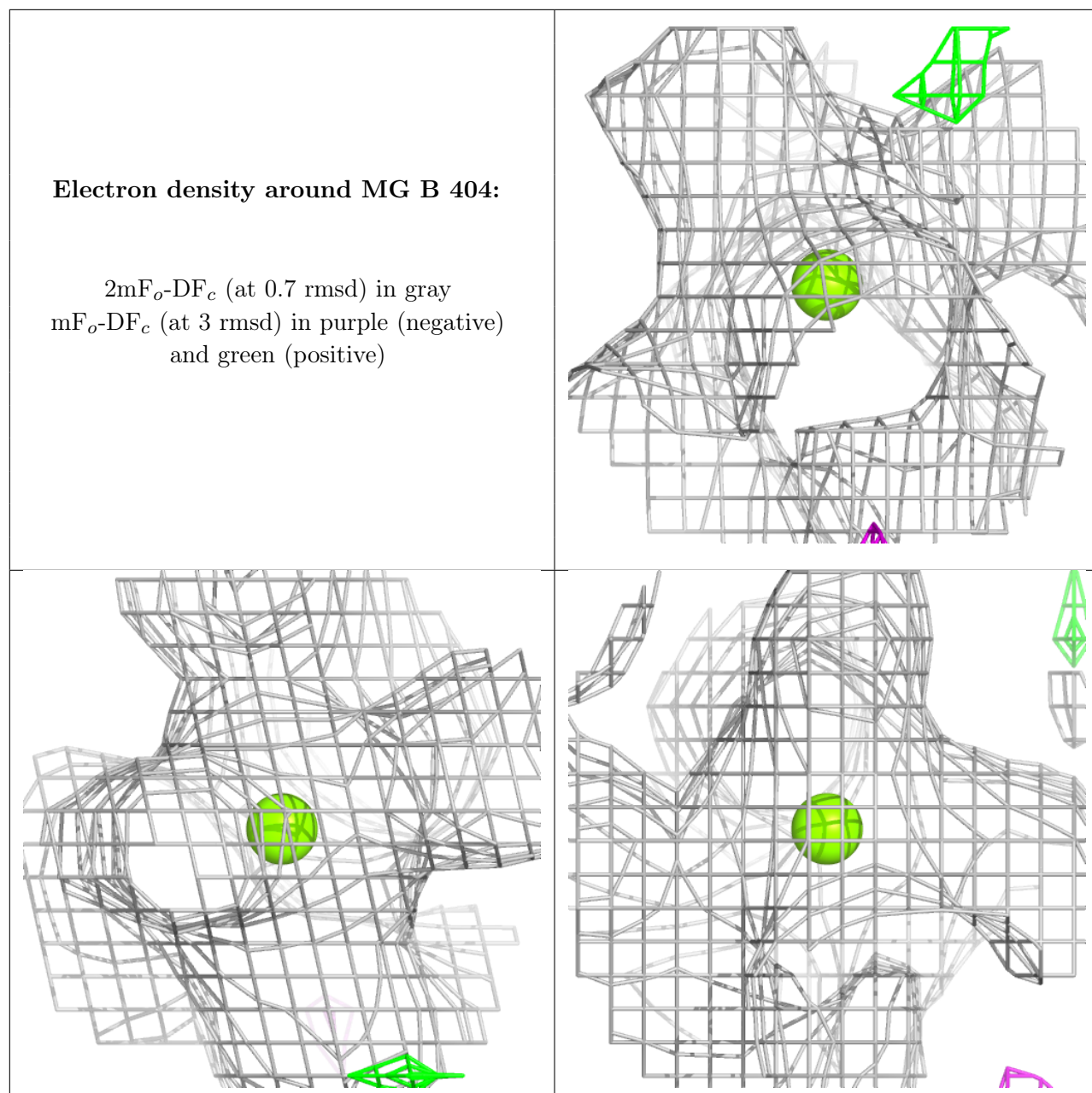**Electron density around K B 403:**

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

Electron density around MG B 404:

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

6.5 Other polymers ⓘ

There are no such residues in this entry.