



Full wwPDB X-ray Structure Validation Report ⓘ

Oct 16, 2023 – 04:11 pm BST

PDB ID : 8PX9
Title : Structure of the antibacterial peptide ABC transporter McjD, solved at wavelength 2.75 Å
Authors : El Omari, K.; Duman, R.; Mykhaylyk, V.; Orr, C.; Bountra, K.; Beis, K.; Wagner, A.
Deposited on : 2023-07-22
Resolution : 2.80 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4.02b-467
Mogul : 1.8.4, CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.36
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

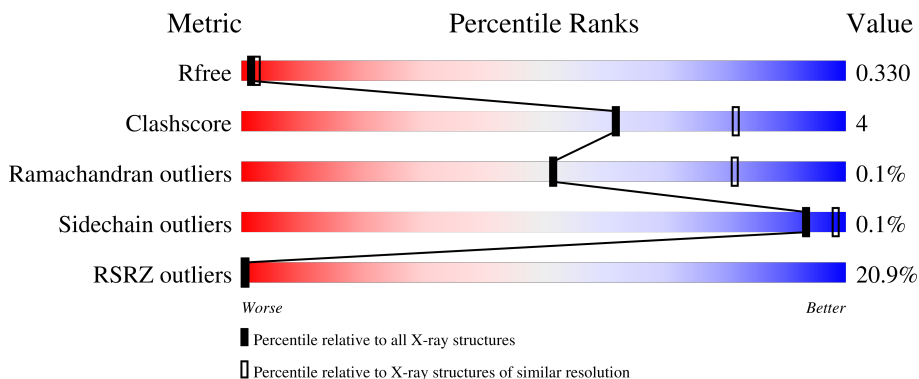
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.80 Å.

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



Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	3140 (2.80-2.80)
Clashscore	141614	3569 (2.80-2.80)
Ramachandran outliers	138981	3498 (2.80-2.80)
Sidechain outliers	138945	3500 (2.80-2.80)
RSRZ outliers	127900	3078 (2.80-2.80)

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	580	
1	B	580	

2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 8977 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.

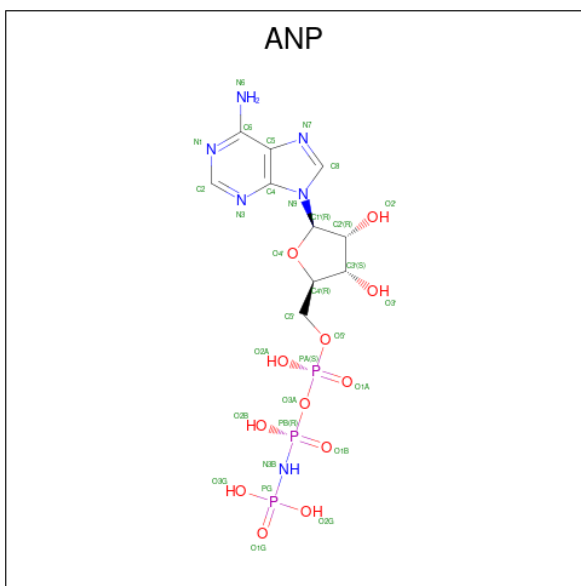
- Molecule 1 is a protein called Microcin-J25 export ATP-binding/permease protein McjD.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	557	Total 4415	C 2849	N 719	O 830	S 17	0	0	0
1	B	567	Total 4498	C 2903	N 733	O 844	S 18	0	0	0

- Molecule 2 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	A	1	Total 1	Mg 1	0	0
2	B	1	Total 1	Mg 1	0	0

- Molecule 3 is PHOSPHOAMINOPHOSPHONIC ACID-ADENYLATE ESTER (three-letter code: ANP) (formula: $C_{10}H_{17}N_6O_{12}P_3$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	A	1	Total	C	N	O	P	0	0
			31	10	6	12	3		
3	B	1	Total	C	N	O	P	0	0
			31	10	6	12	3		



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	81.19Å 109.32Å 233.35Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	54.67 – 2.80 116.67 – 2.80	Depositor EDS
% Data completeness (in resolution range)	99.7 (54.67-2.80) 99.8 (116.67-2.80)	Depositor EDS
R_{merge}	0.21	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.20 (at 2.82Å)	Xtrriage
Refinement program	REFMAC 5.8.0419	Depositor
R, R_{free}	0.292 , 0.330 0.297 , 0.330	Depositor DCC
R_{free} test set	2579 reflections (4.97%)	wwPDB-VP
Wilson B-factor (Å ²)	89.9	Xtrriage
Anisotropy	0.803	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.26 , 79.4	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.84	EDS
Total number of atoms	8977	wwPDB-VP
Average B, all atoms (Å ²)	165.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 6.57% 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: ANP, MG

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	0.41	0/4487	0.61	0/6075
1	B	0.41	0/4573	0.71	0/6191
All	All	0.41	0/9060	0.66	0/12266

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	B	0	1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	B	563	ARG	Sidechain

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	4415	0	4522	54	0
1	B	4498	0	4607	29	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
3	A	31	0	13	0	0
3	B	31	0	13	0	0
All	All	8977	0	9155	79	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 4.

All (79) 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:A:343:LEU:HD12	1:A:500:ALA:HB3	1.41	1.01
1:A:142:ASN:HD21	1:A:309:GLU:HB2	1.44	0.83
1:A:142:ASN:ND2	1:A:309:GLU:HB2	2.00	0.77
1:A:294:ILE:HD12	1:B:76:VAL:HG11	1.68	0.76
1:A:343:LEU:CD1	1:A:500:ALA:HB3	2.18	0.70
1:B:32:THR:HG22	1:B:149:SER:HB2	1.75	0.68
1:B:377:THR:HG22	1:B:571:TYR:HE2	1.58	0.68
1:A:76:VAL:HG11	1:B:294:ILE:HD12	1.76	0.67
1:A:388:VAL:HG11	1:A:535:ILE:HD11	1.78	0.66
1:A:298:THR:OG1	1:A:299:PRO:HD3	1.96	0.66
1:A:105:TYR:HE1	1:A:324:HIS:CE1	2.14	0.65
1:A:343:LEU:HD12	1:A:500:ALA:CB	2.23	0.64
1:A:142:ASN:HD21	1:A:309:GLU:CB	2.08	0.64
1:B:377:THR:HG22	1:B:571:TYR:CE2	2.32	0.64
1:A:188:THR:HG23	1:A:311:ARG:CD	2.29	0.61
1:A:552:ASN:HB3	1:A:557:VAL:HG21	1.81	0.60
1:A:29:LEU:HD13	1:A:144:SER:HA	1.82	0.60
1:A:212:THR:HG23	1:A:231:ARG:HH21	1.68	0.58
1:B:388:VAL:HG11	1:B:535:ILE:HD11	1.85	0.58
1:B:552:ASN:HB3	1:B:557:VAL:HG21	1.86	0.58
1:A:146:ASN:O	1:A:306:LEU:HD22	2.06	0.56
1:A:404:LEU:HD12	1:A:412:ILE:HD13	1.87	0.56
1:A:212:THR:CG2	1:A:231:ARG:HH21	2.18	0.56
1:A:368:LEU:HB3	1:A:531:LEU:HD11	1.89	0.55
1:A:188:THR:HG23	1:A:311:ARG:HD3	1.89	0.54
1:B:404:LEU:HD12	1:B:412:ILE:HD13	1.90	0.53
1:B:212:THR:HG23	1:B:231:ARG:HH21	1.73	0.53
1:A:18:ASP:HB3	1:A:100:LYS:HE2	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:368:LEU:HB3	1:B:531:LEU:HD11	1.91	0.52
1:A:436:ARG:NH2	1:A:471:ASP:OD1	2.44	0.51
1:A:454:VAL:HG13	1:A:495:PHE:HB2	1.93	0.51
1:A:305:ALA:O	1:A:309:GLU:HG2	2.10	0.51
1:B:305:ALA:O	1:B:309:GLU:HG3	2.12	0.50
1:A:377:THR:HG22	1:A:378:GLY:N	2.27	0.50
1:A:225:LEU:HD11	1:B:107:ARG:HG2	1.92	0.49
1:B:436:ARG:NH2	1:B:471:ASP:OD1	2.45	0.48
1:B:32:THR:HG21	1:B:145:GLN:HA	1.96	0.48
1:A:534:ASN:ND2	1:A:541:LEU:HB3	2.28	0.48
1:A:534:ASN:HD21	1:A:541:LEU:HB3	1.79	0.47
1:A:377:THR:OG1	1:A:542:LEU:HD21	2.15	0.47
1:A:460:LEU:O	1:A:468:VAL:HG11	2.15	0.47
1:B:212:THR:CG2	1:B:231:ARG:HH21	2.27	0.47
1:A:421:ILE:HG12	1:A:501:ILE:HB	1.97	0.47
1:B:52:LEU:HG	1:B:60:PHE:HB2	1.97	0.46
1:A:424:LEU:HD11	1:A:494:LEU:HD22	1.97	0.46
1:A:409:LEU:HA	1:A:412:ILE:HD12	1.98	0.45
1:A:189:GLY:HA2	1:A:311:ARG:HE	1.80	0.45
1:A:320:PHE:CZ	1:A:324:HIS:NE2	2.84	0.45
1:B:409:LEU:HA	1:B:412:ILE:HD12	1.98	0.45
1:B:424:LEU:HD11	1:B:494:LEU:HD22	1.99	0.45
1:B:360:ILE:CG2	1:B:386:THR:HG21	2.47	0.45
1:A:534:ASN:HD21	1:A:541:LEU:HD13	1.82	0.44
1:A:188:THR:HG23	1:A:311:ARG:HD2	1.99	0.44
1:A:116:ASN:HA	1:A:119:LYS:HE3	1.99	0.44
1:A:491:LEU:HD11	1:A:508:THR:HG22	1.99	0.43
1:A:286:PHE:O	1:A:290:THR:HG23	2.18	0.43
1:B:377:THR:OG1	1:B:542:LEU:HD21	2.18	0.43
1:B:454:VAL:HG13	1:B:495:PHE:HB2	1.99	0.43
1:A:105:TYR:CE1	1:A:324:HIS:CE1	3.00	0.43
1:B:491:LEU:HD13	1:B:519:ILE:HG21	2.01	0.43
1:A:454:VAL:HG21	1:A:496:LEU:HG	2.00	0.43
1:B:504:ILE:HG23	1:B:507:ALA:HB3	1.99	0.43
1:A:380:SER:HB2	1:B:488:ARG:NH2	2.34	0.43
1:A:173:PHE:CZ	1:A:268:VAL:HG11	2.53	0.43
1:B:18:ASP:HB3	1:B:100:LYS:HE2	2.00	0.43
1:A:504:ILE:HG23	1:A:507:ALA:HB3	2.02	0.42
1:A:105:TYR:HE1	1:A:324:HIS:NE2	2.17	0.42
1:A:219:ALA:O	1:A:223:ASN:O	2.38	0.42
1:A:50:THR:HG21	1:A:287:ILE:HG13	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:377:THR:CG2	1:B:571:TYR:HE2	2.28	0.41
1:A:343:LEU:CD1	1:A:500:ALA:CB	2.92	0.41
1:A:461:SER:O	1:A:468:VAL:HG12	2.21	0.41
1:A:42:SER:OG	1:A:43:PRO:HD3	2.20	0.41
1:A:491:LEU:HD13	1:A:519:ILE:HG21	2.03	0.41
1:B:454:VAL:HG21	1:B:496:LEU:HG	2.02	0.41
1:B:197:HIS:CE1	1:B:201:ILE:HD11	2.56	0.41
1:A:105:TYR:CE1	1:A:324:HIS:NE2	2.89	0.40
1:B:501:ILE:HG12	1:B:531:LEU:HD23	2.03	0.40
1:A:520:LEU:CD1	1:A:541:LEU:HD21	2.51	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	A	553/580 (95%)	543 (98%)	9 (2%)	1 (0%)	47 78
1	B	563/580 (97%)	555 (99%)	8 (1%)	0	100 100
All	All	1116/1160 (96%)	1098 (98%)	17 (2%)	1 (0%)	51 81

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	143	VAL

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	507/529 (96%)	507 (100%)	0	100	100
1	B	517/529 (98%)	516 (100%)	1 (0%)	93	98
All	All	1024/1058 (97%)	1023 (100%)	1 (0%)	93	98

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	384	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	98	GLN
1	A	142	ASN
1	A	146	ASN
1	A	534	ASN
1	B	197	HIS
1	B	243	GLN
1	B	485	GLN
1	B	534	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 monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 4 ligands modelled in this entry, 2 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
3	ANP	A	602	2	29,33,33	1.24	5 (17%)	31,52,52	1.54	3 (9%)
3	ANP	B	600	2	29,33,33	1.14	4 (13%)	31,52,52	1.63	5 (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
3	ANP	A	602	2	-	2/14/38/38	0/3/3/3
3	ANP	B	600	2	-	2/14/38/38	0/3/3/3

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	600	ANP	PB-O1B	3.20	1.51	1.46
3	A	602	ANP	PG-O3G	-2.99	1.48	1.56
3	A	602	ANP	PB-O1B	2.93	1.50	1.46
3	A	602	ANP	PG-O1G	2.44	1.50	1.46
3	B	600	ANP	PG-O1G	2.15	1.49	1.46
3	A	602	ANP	PB-O2B	-2.14	1.51	1.56
3	B	600	ANP	C8-N7	-2.04	1.31	1.34
3	A	602	ANP	PB-O3A	2.04	1.61	1.59
3	B	600	ANP	PB-O2B	-2.00	1.51	1.56

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	600	ANP	O2B-PB-O1B	5.25	120.93	109.92
3	A	602	ANP	O2B-PB-O1B	5.03	120.47	109.92
3	A	602	ANP	O1G-PG-N3B	4.08	117.78	111.77
3	A	602	ANP	O3G-PG-O1G	-3.85	103.77	113.45
3	B	600	ANP	O1G-PG-N3B	3.67	117.17	111.77

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	600	ANP	O3G-PG-O1G	-3.50	104.66	113.45
3	B	600	ANP	C4-C5-N7	2.28	111.78	109.40
3	B	600	ANP	O2G-PG-O1G	-2.15	108.05	113.45

There are no chirality outliers.

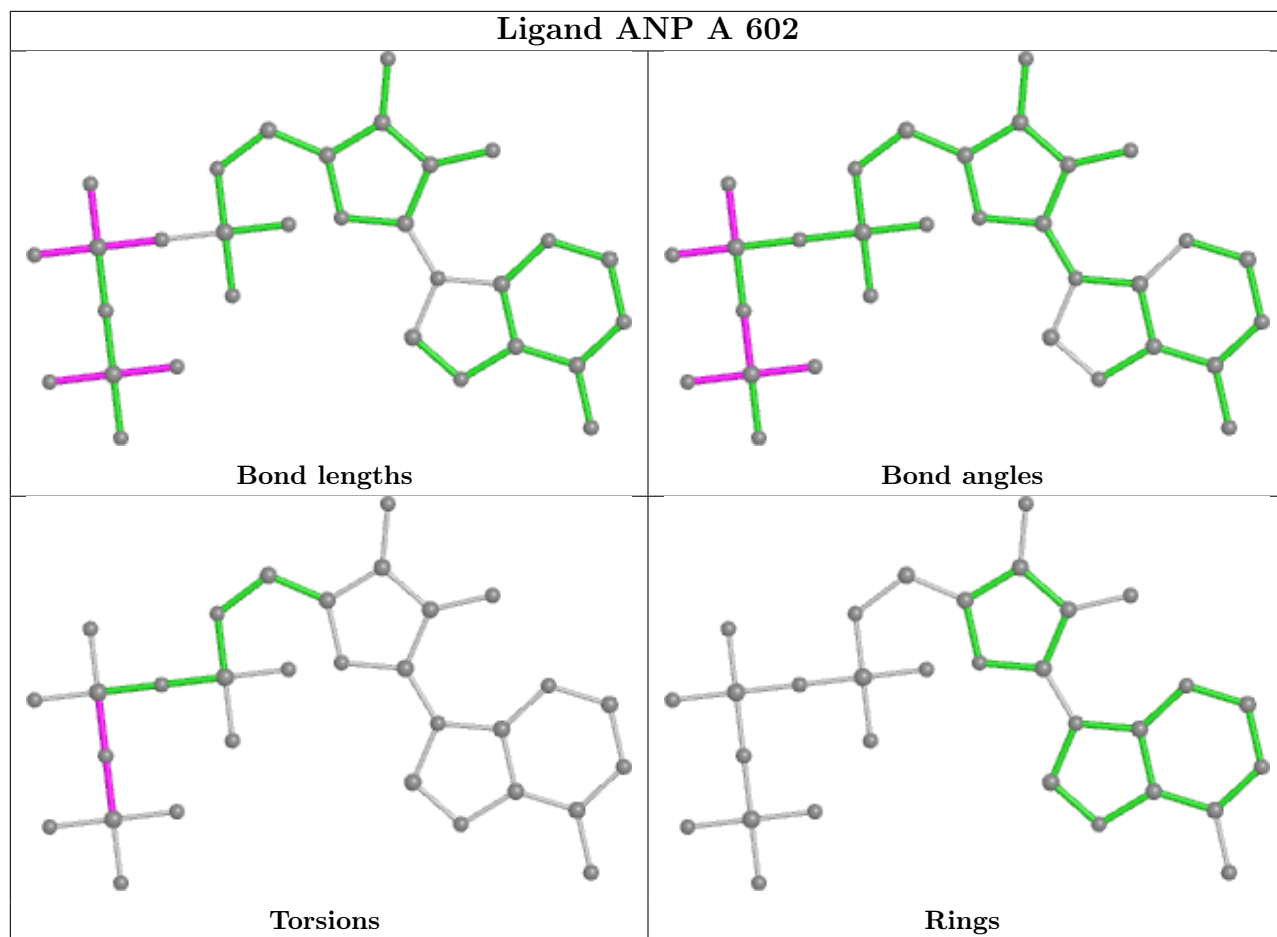
All (4) torsion outliers are listed below:

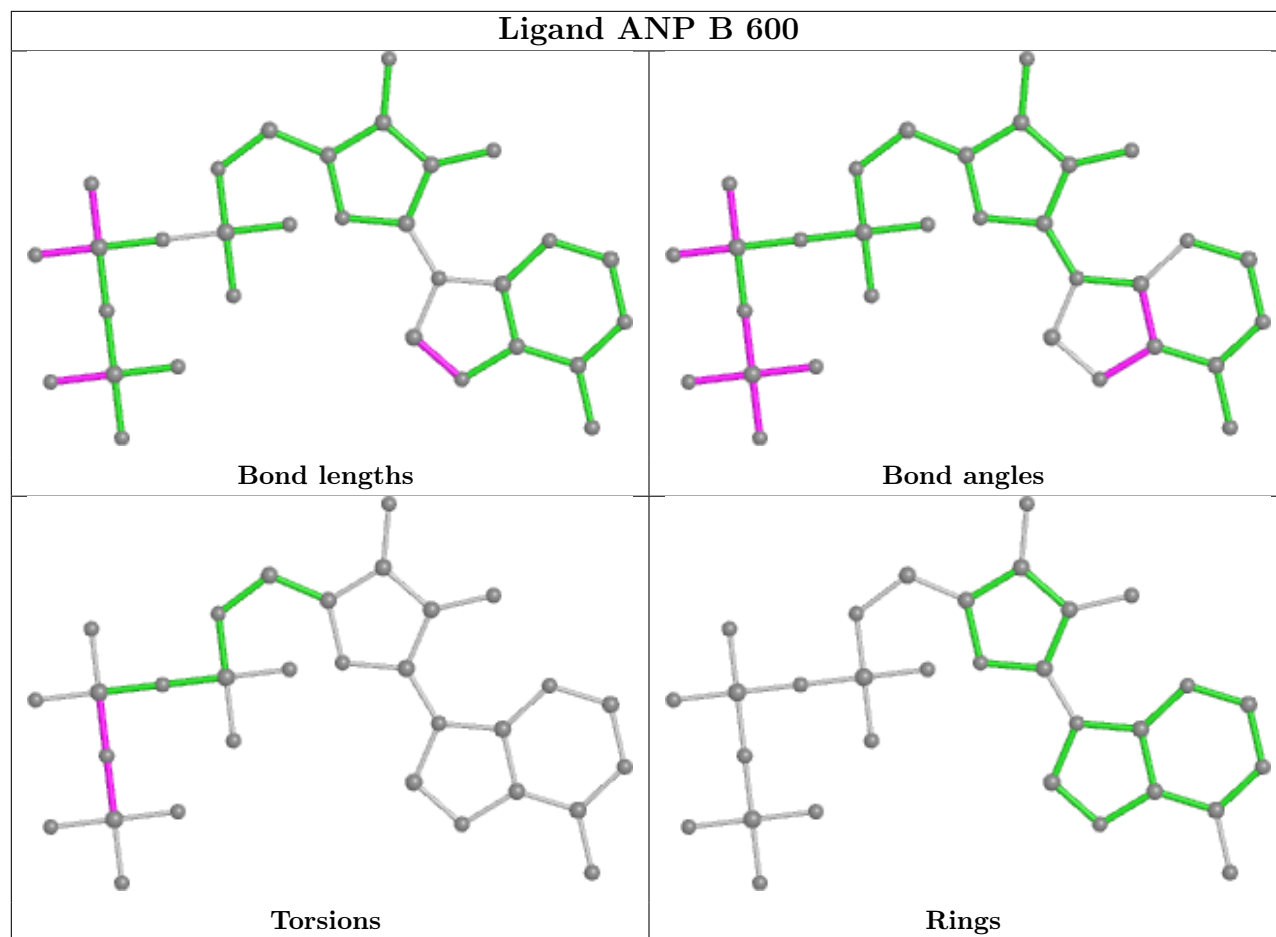
Mol	Chain	Res	Type	Atoms
3	A	602	ANP	PB-N3B-PG-O1G
3	A	602	ANP	PG-N3B-PB-O1B
3	B	600	ANP	PB-N3B-PG-O1G
3	B	600	ANP	PG-N3B-PB-O1B

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





5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data [i](#)

6.1 Protein, DNA and RNA chains [i](#)

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	557/580 (96%)	1.15	120 (21%) 0 0	128, 162, 205, 249	0
1	B	567/580 (97%)	1.17	115 (20%) 1 0	122, 158, 205, 244	0
All	All	1124/1160 (96%)	1.16	235 (20%) 1 0	122, 160, 205, 249	0

All (235) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	60	PHE	13.5
1	A	476	ASN	8.9
1	B	62	TYR	8.3
1	A	565	LEU	8.3
1	B	61	SER	8.0
1	B	422	TYR	7.5
1	B	59	ASN	7.4
1	A	430	ILE	6.5
1	B	12	TYR	6.4
1	A	563	ARG	6.3
1	A	477	ARG	6.2
1	A	529	ASP	6.1
1	B	64	TYR	6.1
1	A	531	LEU	5.8
1	B	391	ILE	5.8
1	A	419	ASP	5.8
1	A	12	TYR	5.5
1	A	420	ALA	5.5
1	A	539	ILE	5.4
1	A	342	LYS	5.4
1	A	14	TYR	5.4
1	B	431	PHE	5.3
1	B	519	ILE	5.3
1	A	9	LEU	5.2

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Mol	Chain	Res	Type	RSRZ
1	B	137	TYR	5.2
1	A	560	GLY	5.1
1	A	562	PHE	5.1
1	B	16	LEU	5.1
1	A	504	ILE	5.0
1	A	424	LEU	5.0
1	A	320	PHE	5.0
1	A	464	ASN	4.9
1	B	491	LEU	4.8
1	A	535	ILE	4.7
1	B	394	TYR	4.6
1	B	392	SER	4.6
1	A	500	ALA	4.6
1	A	324	HIS	4.6
1	A	221	LYS	4.5
1	A	431	PHE	4.5
1	A	357	ASP	4.4
1	A	527	PHE	4.4
1	B	209	LEU	4.4
1	B	196	LYS	4.4
1	B	435	LEU	4.3
1	B	246	TYR	4.3
1	B	460	LEU	4.3
1	A	503	ILE	4.3
1	B	63	GLU	4.3
1	A	533	ILE	4.2
1	A	548	VAL	4.2
1	A	501	ILE	4.2
1	B	213	VAL	4.2
1	B	504	ILE	4.2
1	B	101	MET	4.1
1	B	65	LEU	4.1
1	A	343	LEU	4.0
1	A	435	LEU	4.0
1	B	14	TYR	4.0
1	B	221	LYS	4.0
1	A	541	LEU	3.9
1	A	72	TYR	3.9
1	A	376	LEU	3.9
1	A	474	LEU	3.9
1	A	204	ASN	3.8
1	A	391	ILE	3.8

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Mol	Chain	Res	Type	RSRZ
1	A	77	ILE	3.8
1	B	317	LEU	3.7
1	A	478	GLY	3.7
1	B	503	ILE	3.7
1	A	191	LEU	3.7
1	B	551	LEU	3.7
1	B	139	LEU	3.7
1	B	191	LEU	3.6
1	A	542	LEU	3.5
1	A	543	GLU	3.4
1	A	240	ASN	3.4
1	A	421	ILE	3.4
1	B	84	PHE	3.4
1	B	401	ASP	3.4
1	B	218	ALA	3.4
1	A	392	SER	3.4
1	A	528	PRO	3.3
1	A	551	LEU	3.3
1	B	387	LEU	3.3
1	B	315	SER	3.3
1	A	217	ILE	3.3
1	B	97	MET	3.3
1	A	538	ARG	3.3
1	B	13	ILE	3.3
1	B	222	ASN	3.2
1	A	71	LEU	3.2
1	A	65	LEU	3.2
1	B	345	LEU	3.2
1	A	429	TYR	3.2
1	B	393	GLY	3.2
1	A	10	PHE	3.2
1	A	254	LEU	3.2
1	A	49	ILE	3.1
1	A	76	VAL	3.1
1	B	141	ARG	3.1
1	B	316	SER	3.1
1	B	350	LEU	3.0
1	B	423	TYR	3.0
1	B	352	PHE	3.0
1	A	95	ILE	3.0
1	A	242	ALA	3.0
1	A	494	LEU	3.0

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Mol	Chain	Res	Type	RSRZ
1	B	476	ASN	3.0
1	A	83	VAL	3.0
1	B	557	VAL	2.9
1	A	532	ILE	2.9
1	B	451	ILE	2.9
1	B	474	LEU	2.9
1	B	541	LEU	2.9
1	A	579	THR	2.8
1	A	375	SER	2.8
1	A	243	GLN	2.8
1	A	321	ILE	2.8
1	B	197	HIS	2.8
1	A	374	TYR	2.8
1	B	98	GLN	2.8
1	A	432	MET	2.8
1	B	140	VAL	2.7
1	A	534	ASN	2.7
1	A	578	VAL	2.7
1	B	487	GLN	2.7
1	A	507	ALA	2.6
1	B	136	ILE	2.6
1	B	360	ILE	2.6
1	B	254	LEU	2.6
1	A	475	ILE	2.6
1	A	178	LEU	2.6
1	B	439	LEU	2.6
1	A	17	MET	2.6
1	A	245	LYS	2.6
1	B	138	ILE	2.6
1	B	228	ILE	2.6
1	B	424	LEU	2.6
1	B	318	ALA	2.6
1	A	78	SER	2.5
1	A	505	ASP	2.5
1	A	13	ILE	2.5
1	B	395	TYR	2.5
1	B	88	ILE	2.5
1	A	67	LEU	2.5
1	B	24	LEU	2.5
1	A	73	MET	2.5
1	B	195	ARG	2.5
1	B	216	MET	2.5

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Mol	Chain	Res	Type	RSRZ
1	B	262	VAL	2.5
1	B	77	ILE	2.5
1	B	273	ILE	2.5
1	B	421	ILE	2.5
1	A	214	ASP	2.4
1	B	17	MET	2.4
1	B	358	LYS	2.4
1	B	94	ARG	2.4
1	A	451	ILE	2.4
1	B	41	ILE	2.4
1	B	95	ILE	2.4
1	B	399	PHE	2.4
1	B	576	ALA	2.4
1	B	68	LEU	2.4
1	B	294	ILE	2.4
1	B	502	ILE	2.4
1	B	398	TYR	2.4
1	A	463	VAL	2.4
1	A	465	ASN	2.4
1	B	214	ASP	2.4
1	A	74	PHE	2.4
1	A	484	GLY	2.4
1	A	66	VAL	2.4
1	A	373	MET	2.4
1	A	162	LEU	2.4
1	A	208	LEU	2.4
1	B	67	LEU	2.4
1	A	84	PHE	2.4
1	B	489	ILE	2.4
1	B	532	ILE	2.4
1	A	16	LEU	2.3
1	A	106	LEU	2.3
1	B	523	ILE	2.3
1	B	122	ALA	2.3
1	A	209	LEU	2.3
1	B	118	SER	2.3
1	B	432	MET	2.3
1	A	269	PHE	2.3
1	A	439	LEU	2.3
1	B	334	ILE	2.3
1	B	121	ASN	2.3
1	A	213	VAL	2.3

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Mol	Chain	Res	Type	RSRZ
1	A	109	LEU	2.3
1	A	124	TYR	2.3
1	B	510	ALA	2.3
1	B	343	LEU	2.3
1	A	75	CYS	2.3
1	A	323	ARG	2.3
1	A	203	LEU	2.3
1	A	156	SER	2.2
1	B	217	ILE	2.2
1	B	505	ASP	2.2
1	A	368	LEU	2.2
1	B	349	GLU	2.2
1	A	514	ILE	2.2
1	B	496	LEU	2.2
1	A	69	ALA	2.2
1	A	499	PRO	2.2
1	B	87	MET	2.2
1	A	62	TYR	2.2
1	B	232	TYR	2.2
1	B	10	PHE	2.2
1	A	246	TYR	2.1
1	B	9	LEU	2.1
1	B	389	LYS	2.1
1	B	52	LEU	2.1
1	A	57	LEU	2.1
1	A	572	ILE	2.1
1	A	491	LEU	2.1
1	B	45	ILE	2.1
1	B	132	ALA	2.1
1	B	83	VAL	2.1
1	A	197	HIS	2.1
1	B	473	HIS	2.1
1	A	101	MET	2.1
1	A	515	ASN	2.1
1	A	422	TYR	2.0
1	A	53	LEU	2.0
1	B	93	LEU	2.0
1	B	103	LEU	2.0
1	B	495	PHE	2.0
1	B	274	LEU	2.0
1	A	88	ILE	2.0
1	A	319	GLY	2.0

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Mol	Chain	Res	Type	RSRZ
1	B	484	GLY	2.0

6.2 Non-standard residues in protein, DNA, RNA chains [i](#)

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

6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

6.4 Ligands [i](#)

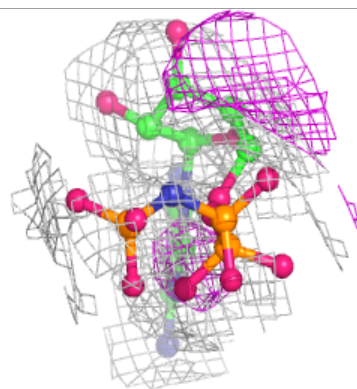
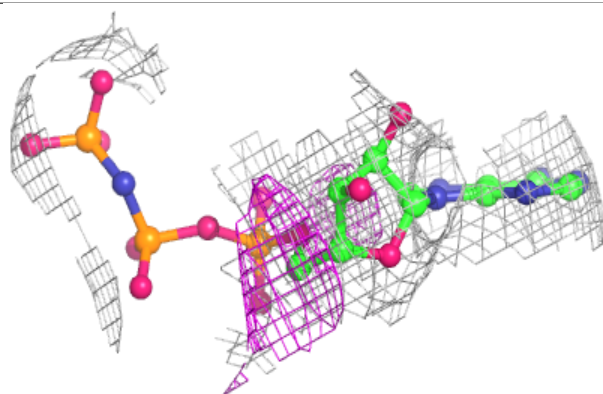
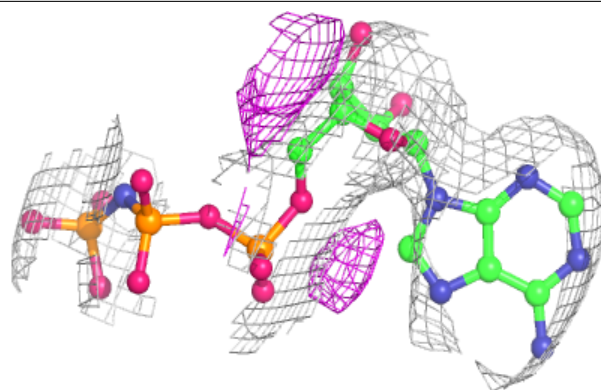
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists 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	ANP	B	600	31/31	0.95	0.20	126,147,156,168	0
3	ANP	A	602	31/31	0.96	0.17	139,157,174,179	0
2	MG	B	601	1/1	0.98	0.19	142,142,142,142	0
2	MG	A	601	1/1	0.99	0.23	148,148,148,148	0

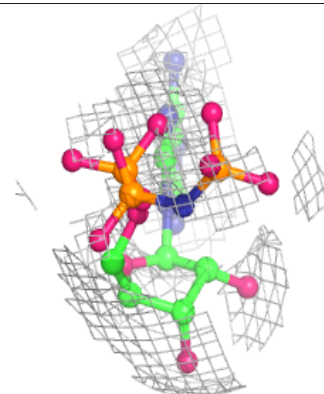
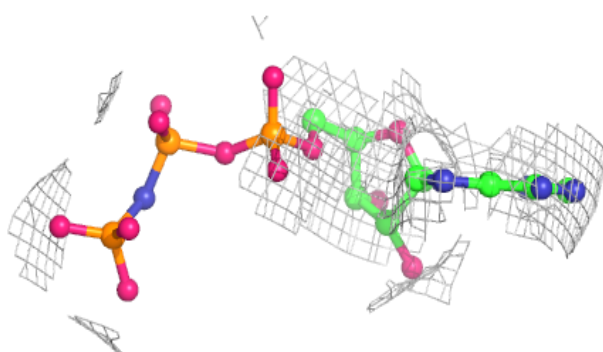
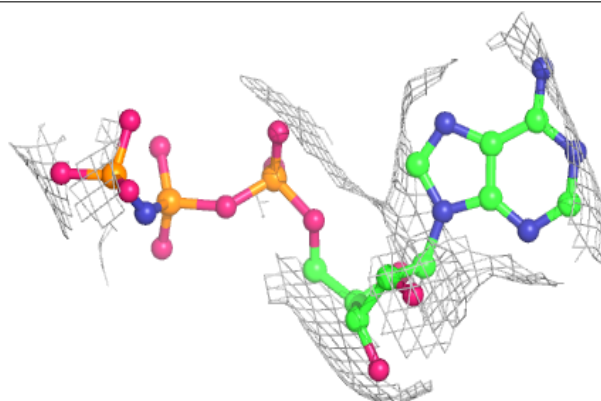
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around ANP B 600:

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

**Electron density around ANP A 602:**

$2mF_o-DF_c$ (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.