Full wwPDB X-ray Structure Validation Report ⓘ

Nov 4, 2025 – 01:21 pm GMT

PDB ID	:	8QYR / pdb_00008qyr
Title	:	Beta-cardiac myosin motor domain in the pre-powerstroke state complexed to Mavacamten
Authors	:	Robert-Paganin, J.; Kikuti, C.; Auguin, D.; Rety, S.; David, A.; Houdusse, A.
Deposited on	:	2023-10-26
Resolution	:	1.80 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:

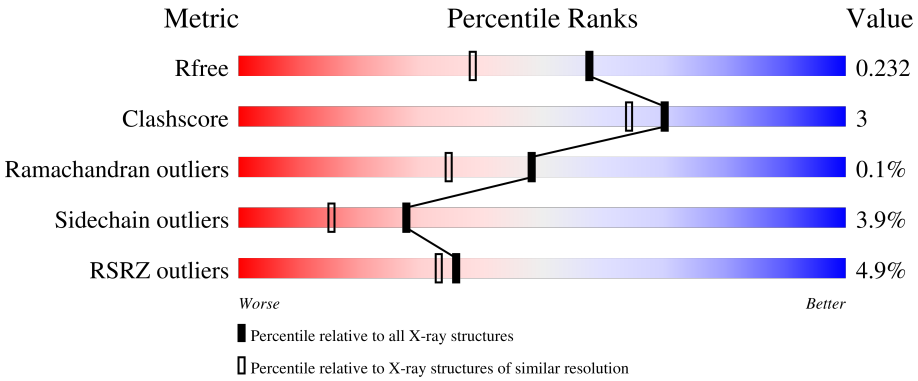
MolProbity	:	4-5-2 with Phenix2.0
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	2.0
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.010 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.46

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 1.80 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}	164625	7108 (1.80-1.80)
Clashscore	180529	8162 (1.80-1.80)
Ramachandran outliers	177936	8077 (1.80-1.80)
Sidechain outliers	177891	8076 (1.80-1.80)
RSRZ outliers	164620	7108 (1.80-1.80)

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 <=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	B	781	4% 79% 11% • 9%

2 Entry composition

There are 8 unique types of molecules in this entry. The entry contains 6258 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.

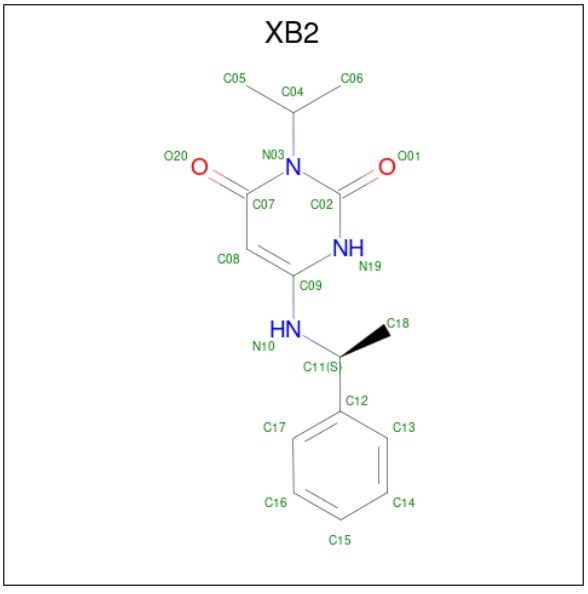
- Molecule 1 is a protein called Myosin-7.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	B	711	Total	C	N	O	S	0	3	0
			5763	3694	970	1066	33			

There is a discrepancy between the modelled and reference sequences:

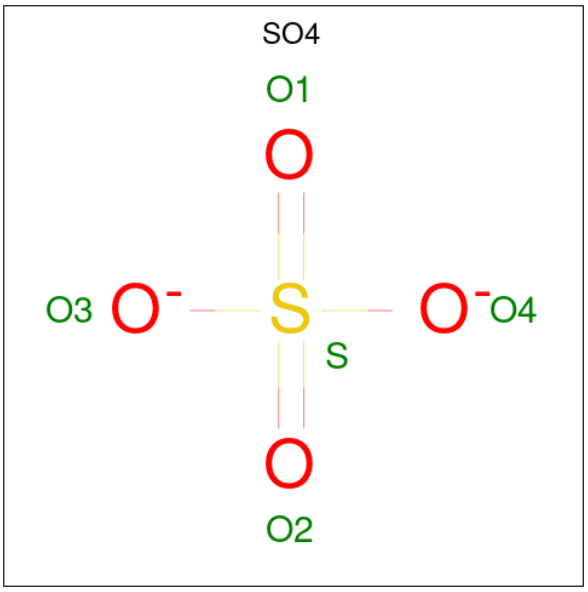
Chain	Residue	Modelled	Actual	Comment	Reference
B	735	ASP	PHE	conflict	UNP Q9BE39

- Molecule 2 is Mavacamten (CCD ID: XB2) (formula: $C_{15}H_{19}N_3O_2$) (labeled as "Ligand of Interest" by depositor).



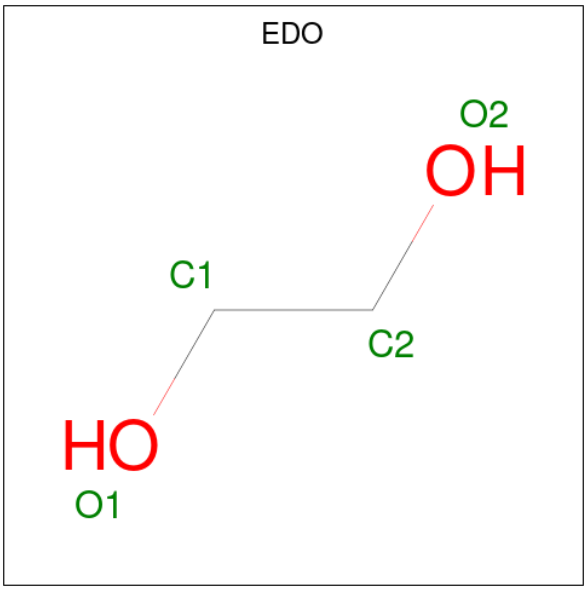
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	B	1	Total	C	N	O	0	0
			20	15	3	2		

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



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

- Molecule 4 is 1,2-ETHANEDIOL (CCD ID: EDO) (formula: $C_2H_6O_2$).

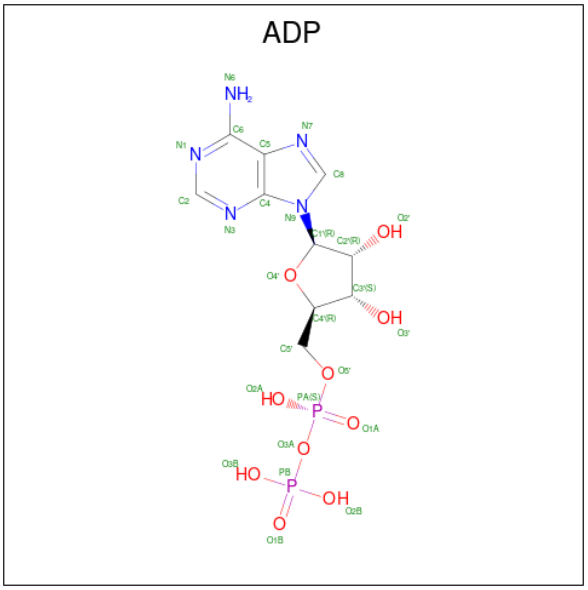


Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	B	1	Total C O 4 2 2	0	0

- Molecule 5 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

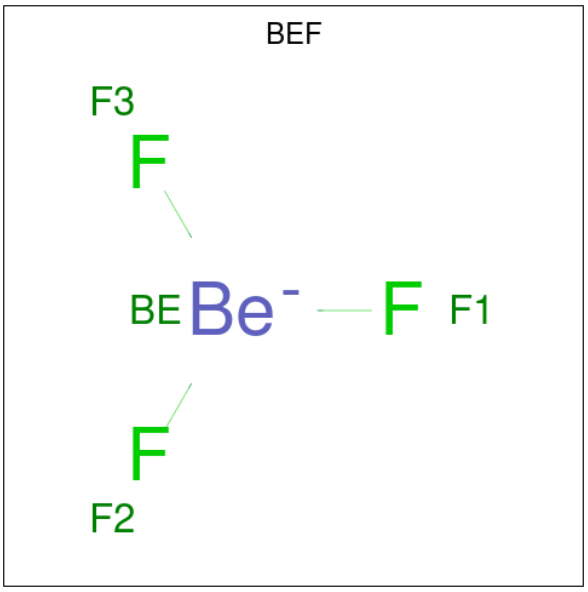
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	B	1	Total Mg 1 1	0	0

- Molecule 6 is ADENOSINE-5'-DIPHOSPHATE (CCD ID: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	B	1	Total C N O P 27 10 5 10 2	0	0

- Molecule 7 is BERYLLIUM TRIFLUORIDE ION (CCD ID: BEF) (formula: BeF_3) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
7	B	1	Total	Be	F	0	0
			4	1	3		

- Molecule 8 is water.

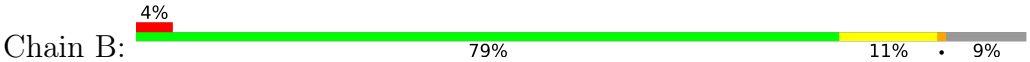
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
8	B	424	Total	O	0	0
			424	424		

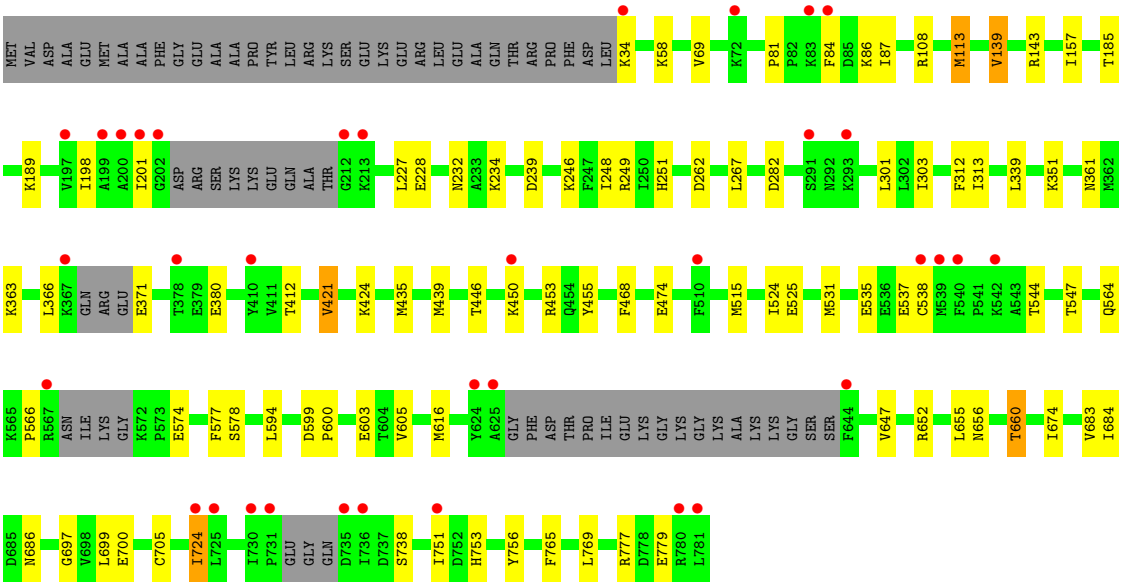
3 Residue-property plots (i)

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: Myosin-7

Chain B:





4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	68.58Å 95.68Å 127.14Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	36.00 – 1.80 36.00 – 1.80	Depositor EDS
% Data completeness (in resolution range)	53.5 (36.00-1.80) 53.9 (36.00-1.80)	Depositor EDS
R_{merge}	0.18	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.85 (at 1.81Å)	Xtriage
Refinement program	BUSTER 2.10.2	Depositor
R, R_{free}	0.187 , 0.227 0.190 , 0.232	Depositor DCC
R_{free} test set	2125 reflections (5.08%)	wwPDB-VP
Wilson B-factor (Å^2)	27.7	Xtriage
Anisotropy	0.075	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 48.1	EDS
L-test for twinning[2]	$< \|L\| > = 0.50$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.95	EDS
Total number of atoms	6258	wwPDB-VP
Average B, all atoms (Å^2)	38.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.15% of the height of the origin peak. No significant pseudotranslation is detected.*

[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: M3L, SO4, BEF, ADP, MG, EDO, XB2

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	B	0.86	2/5860 (0.0%)	1.27	8/7897 (0.1%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	674	ILE	CA-C	6.47	1.58	1.53
1	B	113	MET	SD-CE	-5.26	1.66	1.79

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	674	ILE	CB-CA-C	5.85	116.38	110.94
1	B	139	VAL	N-CA-CB	5.74	118.34	110.54
1	B	468	PHE	CA-CB-CG	5.63	119.43	113.80
1	B	157	ILE	N-CA-C	-5.50	105.36	110.53
1	B	312	PHE	CA-CB-CG	5.20	119.00	113.80
1	B	525	GLU	N-CA-C	5.17	120.24	113.88
1	B	366	LEU	CA-C-N	5.17	131.01	121.70
1	B	366	LEU	C-N-CA	5.17	131.01	121.70

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	B	5763	0	5730	38	0
2	B	20	0	0	0	0
3	B	15	0	0	0	0
4	B	4	0	6	0	0
5	B	1	0	0	0	0
6	B	27	0	12	0	0
7	B	4	0	0	0	0
8	B	424	0	0	2	0
All	All	6258	0	5748	38	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 3.

All (38) 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:524:ILE:HG22	1:B:531:MET:HE2	1.56	0.87
1:B:108:ARG:NH1	1:B:113:MET:HE2	2.05	0.71
1:B:339:LEU:O	1:B:446:THR:HG21	1.91	0.70
1:B:544:THR:HG22	1:B:547:THR:HG23	1.81	0.61
1:B:227:LEU:HD23	1:B:439:MET:HE3	1.83	0.60
1:B:84:PHE:HD1	1:B:87:ILE:HD12	1.70	0.57
1:B:724:ILE:HD11	1:B:777:ARG:HG3	1.87	0.56
1:B:251:HIS:HB3	1:B:453:ARG:HG2	1.88	0.56
1:B:535:GLU:O	1:B:538:CYS:HB2	2.06	0.56
1:B:531:MET:HE3	1:B:652:ARG:HD3	1.89	0.53
1:B:301:LEU:HB2	1:B:303:ILE:HG12	1.91	0.53
1:B:515:MET:HE2	1:B:697:GLY:HA3	1.91	0.52
1:B:656:ASN:O	1:B:660:THR:HG23	2.10	0.51
1:B:435:MET:HG3	1:B:616[B]:MET:HE1	1.91	0.51
1:B:435:MET:HG3	1:B:616[A]:MET:HE1	1.91	0.51
1:B:246:LYS:HD2	1:B:248:ILE:HD11	1.94	0.50
1:B:684:ILE:HG22	1:B:686:ASN:HD22	1.77	0.50
1:B:765:PHE:HD1	1:B:769:LEU:HD23	1.77	0.49
1:B:450:LYS:HA	1:B:453:ARG:HH22	1.76	0.49
1:B:143:ARG:HH22	1:B:201:ILE:HD13	1.77	0.48
1:B:301:LEU:HD22	1:B:351:LYS:HA	1.96	0.47
1:B:143:ARG:HG3	1:B:198:ILE:HD12	1.95	0.47
1:B:421:VAL:HA	1:B:424:LYS:HE3	1.98	0.46
1:B:81:PRO:HD2	1:B:84:PHE:HD2	1.79	0.46
1:B:361:ASN:HB3	1:B:380:GLU:HG2	1.98	0.46
1:B:705:CYS:HB2	8:B:1148:HOH:O	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:249:ARG:HD3	1:B:262:ASP:OD1	2.16	0.45
1:B:185:THR:HG22	1:B:189:LYS:HE2	1.98	0.44
1:B:234:LYS:HG2	1:B:239:ASP:HA	2.00	0.44
1:B:81:PRO:HD2	1:B:84:PHE:CD2	2.52	0.43
1:B:599:ASP:N	1:B:600:PRO:HD3	2.34	0.43
1:B:515:MET:HE3	8:B:1065:HOH:O	2.18	0.43
1:B:282:ASP:OD2	1:B:313:ILE:HG22	2.20	0.42
1:B:753:HIS:HA	1:B:756:TYR:CE2	2.55	0.42
1:B:537:GLU:HB3	1:B:594:LEU:HD21	2.01	0.42
1:B:228:GLU:O	1:B:232:ASN:HB2	2.19	0.42
1:B:566:PRO:HD3	1:B:577:PHE:HA	2.01	0.41
1:B:564:GLN:HB2	1:B:578:SER:OG	2.21	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	B	701/781 (90%)	683 (97%)	17 (2%)	1 (0%)	48 34

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	267	LEU

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	B	620/671 (92%)	596 (96%)	24 (4%)	27 15

All (24) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	34	LYS
1	B	58	LYS
1	B	69	VAL
1	B	86	LYS
1	B	139	VAL
1	B	363	LYS
1	B	371	GLU
1	B	412	THR
1	B	421	VAL
1	B	455	TYR
1	B	474	GLU
1	B	574	GLU
1	B	603	GLU
1	B	605	VAL
1	B	647	VAL
1	B	655	LEU
1	B	660	THR
1	B	683	VAL
1	B	699	LEU
1	B	700	GLU
1	B	724	ILE
1	B	738	SER
1	B	751	ILE
1	B	779	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (10) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	78	GLN
1	B	97	HIS
1	B	401	HIS
1	B	415	GLN
1	B	491	HIS
1	B	555	ASN
1	B	651	HIS

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Mol	Chain	Res	Type
1	B	656	ASN
1	B	753	HIS
1	B	760	HIS

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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	$\#\|Z\| > 2$
1	M3L	B	129	1	10,11,12	0.72	0	9,14,16	0.58	0
1	M3L	B	549	1	10,11,12	0.65	0	9,14,16	0.62	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	M3L	B	129	1	-	3/9/10/12	-
1	M3L	B	549	1	-	2/9/10/12	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (5) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	B	549	M3L	CA-CB-CG-CD
1	B	549	M3L	CE-CD-CG-CB
1	B	129	M3L	CD-CE-NZ-CM3
1	B	129	M3L	CD-CE-NZ-CM2
1	B	129	M3L	CD-CE-NZ-CM1

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 8 ligands modelled in this entry, 1 is monoatomic - leaving 7 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	$\#\|Z\| > 2$
4	EDO	B	804	-	3,3,3	0.64	0	2,2,2	0.06	0
3	SO4	B	805	-	4,4,4	0.25	0	6,6,6	0.11	0
2	XB2	B	801	-	19,21,21	3.83	7 (36%)	23,29,29	2.09	6 (26%)
6	ADP	B	807	5,7	24,29,29	0.89	2 (8%)	29,45,45	0.86	1 (3%)
7	BEF	B	808	6	0,3,3	-	-	-		
3	SO4	B	803	-	4,4,4	0.13	0	6,6,6	0.09	0
3	SO4	B	802	-	4,4,4	0.14	0	6,6,6	0.10	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	EDO	B	804	-	-	1/1/1/1	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	XB2	B	801	-	-	0/10/12/12	0/2/2/2
6	ADP	B	807	5,7	-	3/12/32/32	0/3/3/3

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	801	XB2	O01-C02	12.00	1.45	1.23
2	B	801	XB2	O20-C07	6.98	1.38	1.23
2	B	801	XB2	C02-N03	-5.59	1.32	1.39
2	B	801	XB2	C13-C12	4.25	1.45	1.39
2	B	801	XB2	C16-C15	3.39	1.47	1.38
2	B	801	XB2	C07-N03	-2.79	1.36	1.40
6	B	807	ADP	PB-O2B	-2.35	1.45	1.54
6	B	807	ADP	PB-O1B	2.35	1.58	1.50
2	B	801	XB2	C17-C12	2.27	1.42	1.39

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	801	XB2	N19-C02-N03	5.55	121.99	115.54
2	B	801	XB2	C07-C08-C09	-4.55	117.29	121.47
2	B	801	XB2	O01-C02-N03	-3.76	119.27	122.72
2	B	801	XB2	C08-C07-N03	3.11	120.71	115.64
2	B	801	XB2	C06-C04-N03	2.36	114.99	111.67
6	B	807	ADP	C5-C6-N6	2.33	123.89	120.35
2	B	801	XB2	O20-C07-C08	-2.17	120.17	125.72

There are no chirality outliers.

All (4) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	B	807	ADP	PA-O3A-PB-O2B
4	B	804	EDO	O1-C1-C2-O2
6	B	807	ADP	PA-O3A-PB-O1B
6	B	807	ADP	PA-O3A-PB-O3B

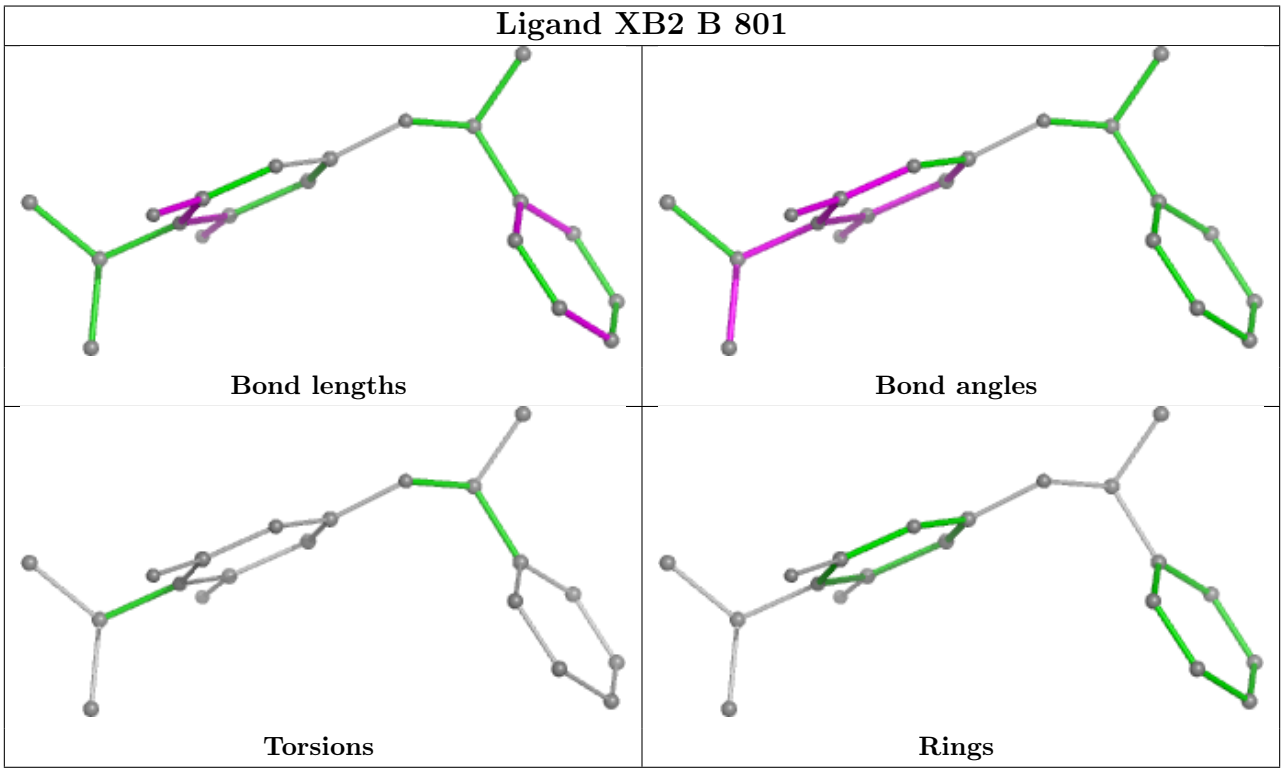
There are no ring outliers.

No monomer is involved in short contacts.

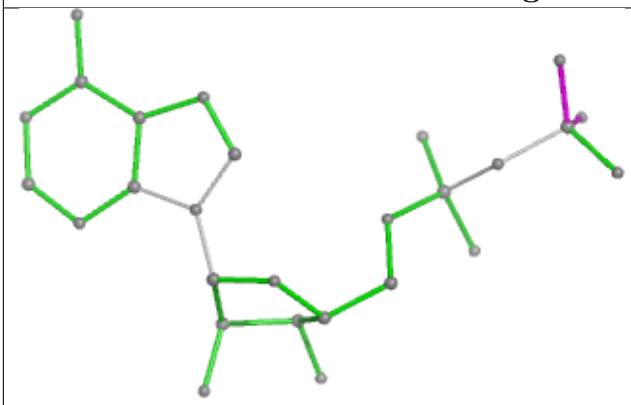
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In

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.

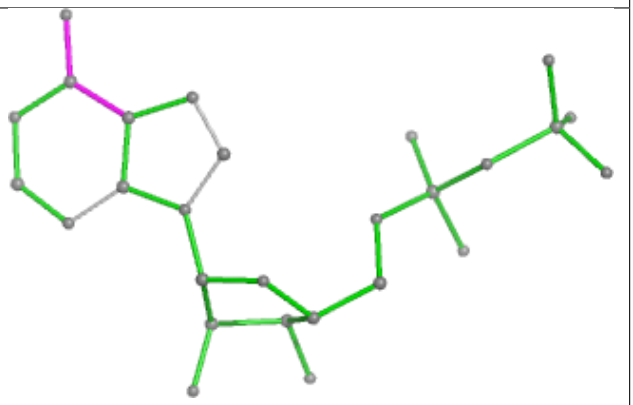
Ligand XB2 B 801



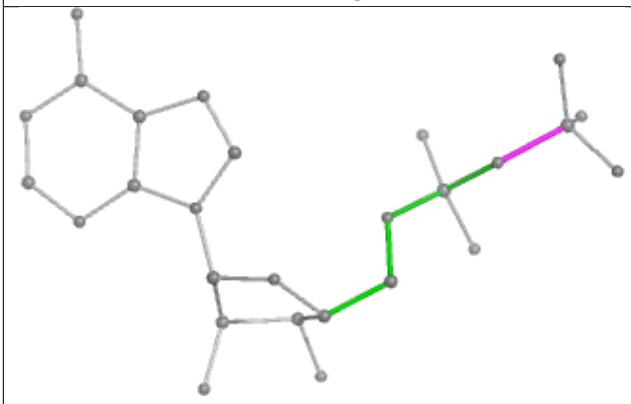
Ligand ADP B 807



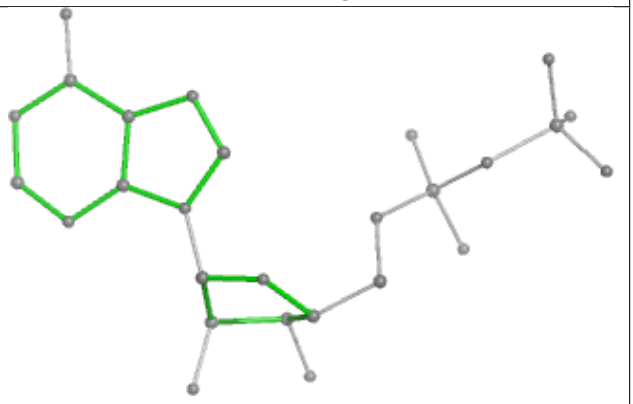
Bond lengths



Bond angles

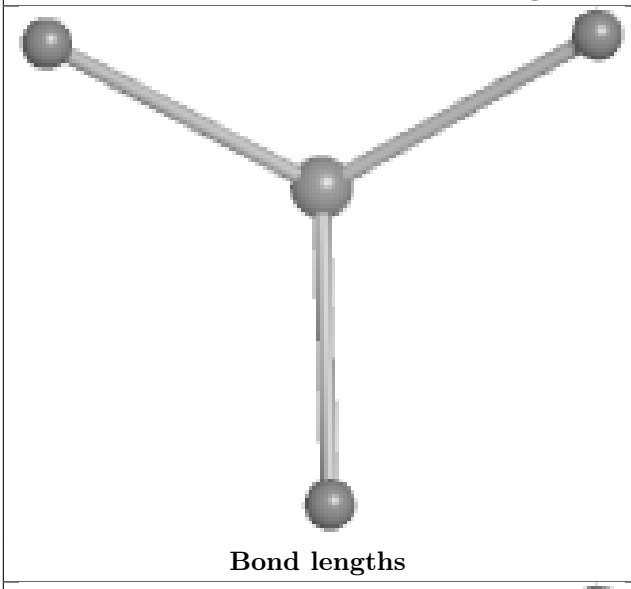


Torsions

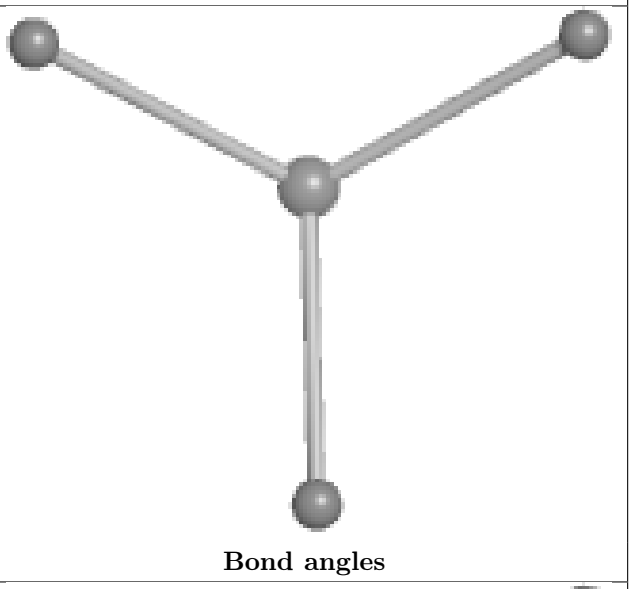


Rings

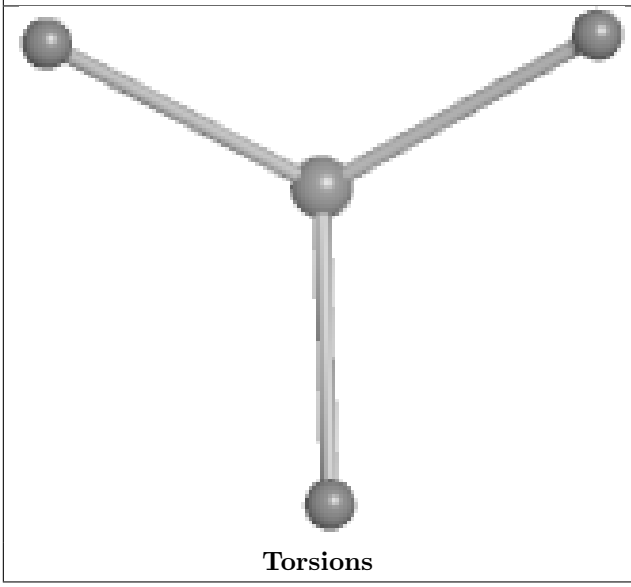
Ligand BEF B 808



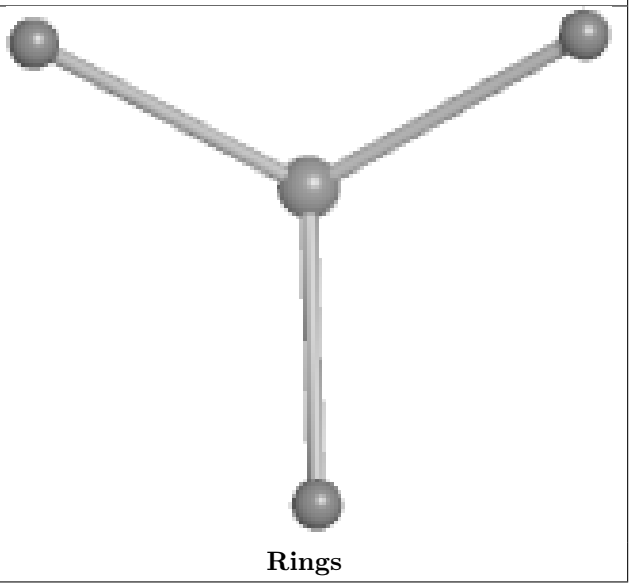
Bond lengths



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, 95^{th} 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	B	709/781 (90%)	0.26	35 (4%) 36 33	13, 34, 65, 106	3 (0%)

All (35) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	625	ALA	5.4
1	B	201	ILE	4.7
1	B	781	LEU	4.4
1	B	539	MET	4.0
1	B	724	ILE	4.0
1	B	367	LYS	4.0
1	B	200	ALA	3.9
1	B	202	GLY	3.9
1	B	644	PHE	3.7
1	B	730	ILE	3.6
1	B	213	LYS	3.3
1	B	736	ILE	3.2
1	B	731	PRO	3.1
1	B	199	ALA	3.1
1	B	212	GLY	3.0
1	B	542	LYS	3.0
1	B	540	PHE	2.9
1	B	410[A]	TYR	2.7
1	B	538	CYS	2.7
1	B	624	TYR	2.6
1	B	34	LYS	2.6
1	B	293	LYS	2.5
1	B	567	ARG	2.4
1	B	735	ASP	2.4
1	B	378	THR	2.4
1	B	725	LEU	2.3
1	B	751	ILE	2.2

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Mol	Chain	Res	Type	RSRZ
1	B	780	ARG	2.2
1	B	450	LYS	2.2
1	B	291	SER	2.2
1	B	84	PHE	2.2
1	B	510	PHE	2.1
1	B	83	LYS	2.1
1	B	72	LYS	2.0
1	B	197	VAL	2.0

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, 95^{th} 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
1	M3L	B	129	12/13	0.95	0.07	27,31,33,34	0
1	M3L	B	549	12/13	0.96	0.09	28,41,57,57	0

6.3 Carbohydrates (i)

There are no oligosaccharides in this entry.

6.4 Ligands (i)

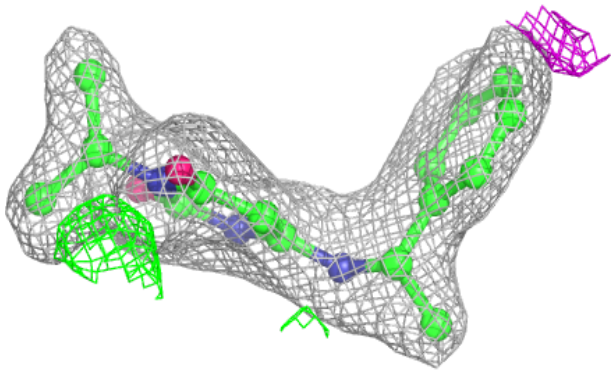
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9'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

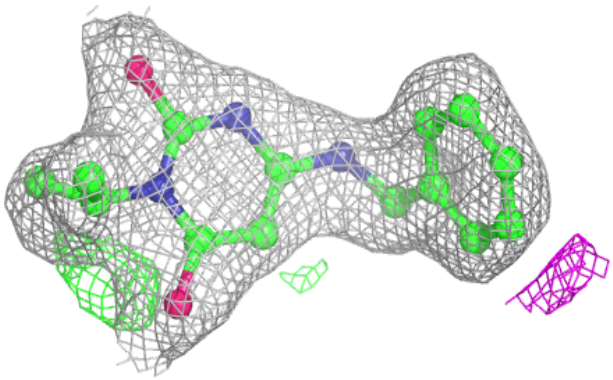
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	SO4	B	803	5/5	0.72	0.15	100,100,100,100	0
3	SO4	B	805	5/5	0.83	0.11	82,83,84,85	0
4	EDO	B	804	4/4	0.88	0.14	39,40,40,40	0
3	SO4	B	802	5/5	0.90	0.12	106,107,107,108	0
2	XB2	B	801	20/20	0.91	0.08	25,28,34,34	0
6	ADP	B	807	27/27	0.97	0.06	13,21,25,28	0
7	BEF	B	808	4/4	0.98	0.04	16,16,17,18	0
5	MG	B	806	1/1	0.99	0.04	21,21,21,21	0

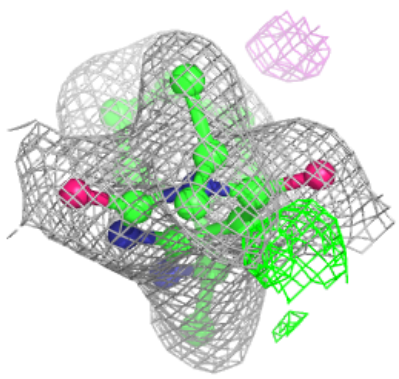
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around XB2 B 801:

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

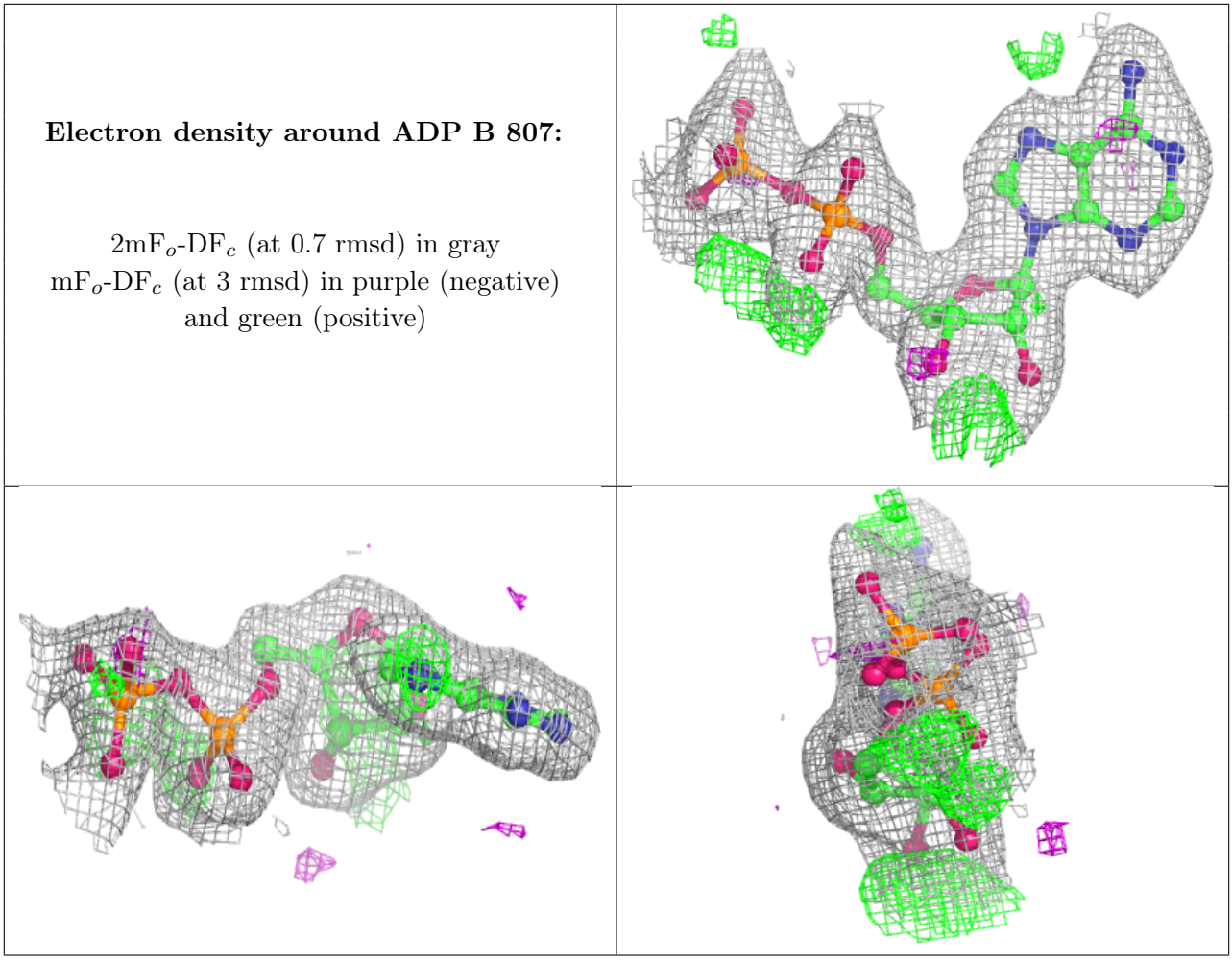






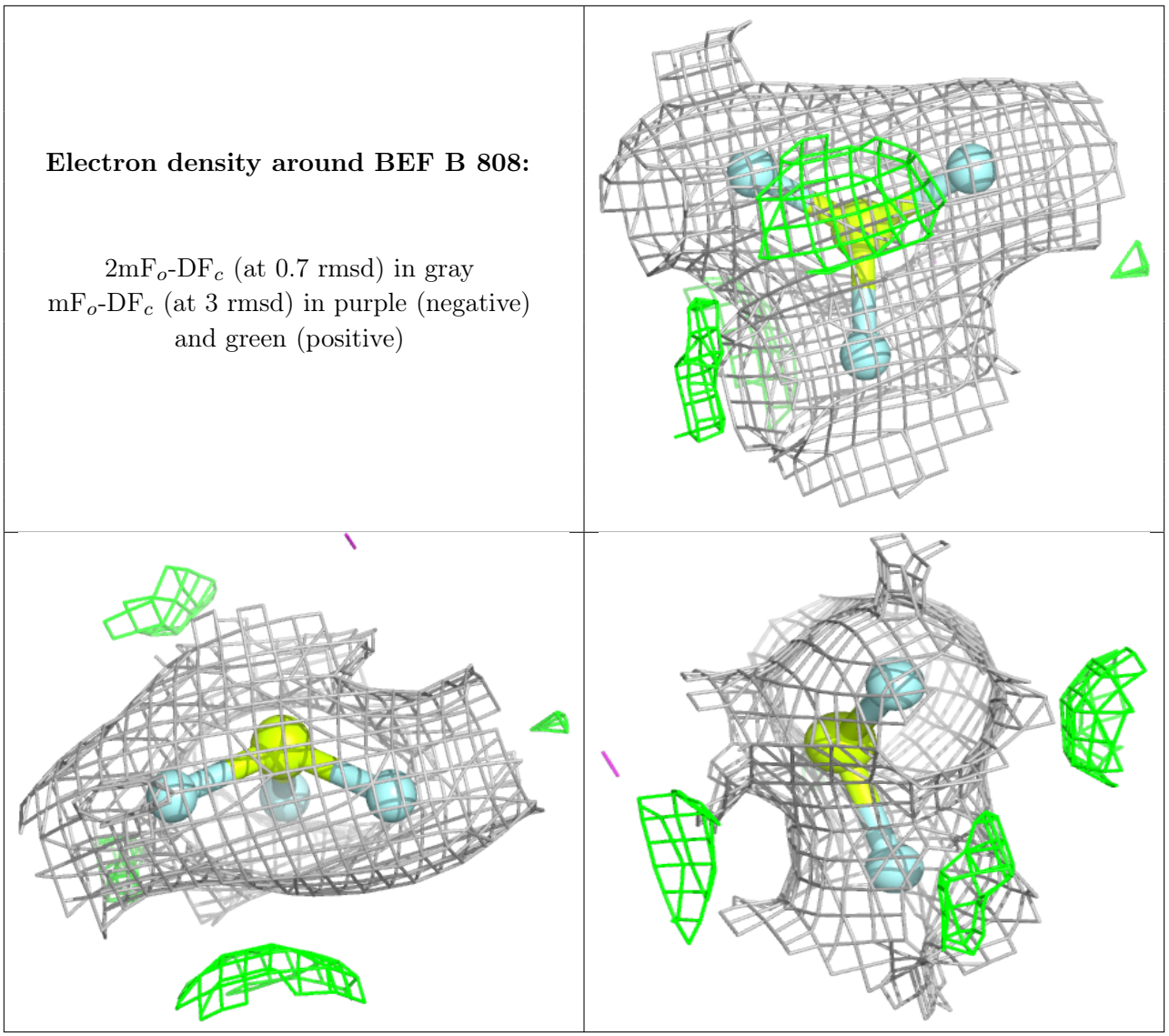
Electron density around ADP B 807:

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



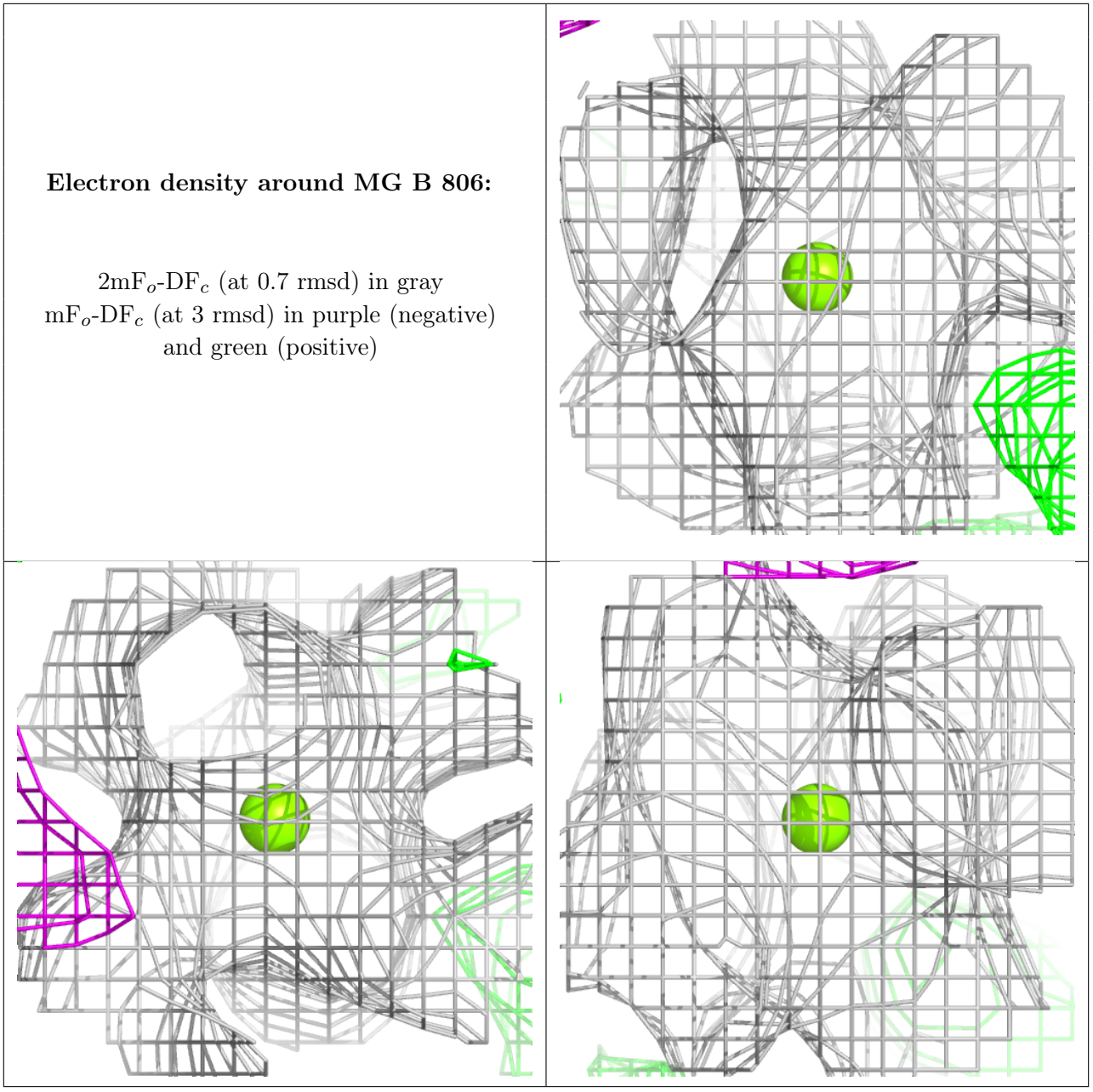
Electron density around BEF B 808:

$2mF_o$-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 B 806:

$2mF_o$-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.