Full wwPDB X-ray Structure Validation Report ⓘ

Jul 16, 2025 – 06:22 PM JST

PDB ID	:	9M1F / pdb_00009m1f
Title	:	Crystal structure of E. coli tryptophanyl-tRNA synthetase complexed with chuangxinmycin and ATP in closed-closed state
Authors	:	Ren, Y.; Wang, S.; Liu, W.; Fang, P.
Deposited on	:	2025-02-25
Resolution	:	1.92 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:

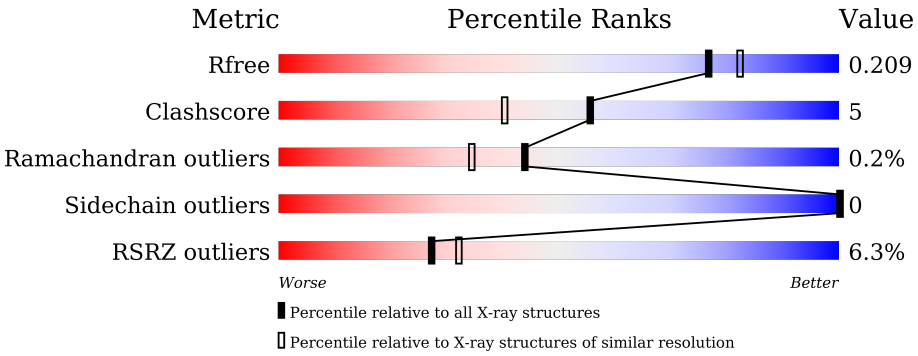
MolProbity	:	4-5-2 with Phenix2.0rc1
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	2.0rc1
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.006 (Gargrove)
Density-Fitness	:	1.0.12
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.44

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 1.92 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	1028 (1.92-1.92)
Clashscore	180529	1100 (1.92-1.92)
Ramachandran outliers	177936	1087 (1.92-1.92)
Sidechain outliers	177891	1087 (1.92-1.92)
RSRZ outliers	164620	1028 (1.92-1.92)

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	340	12% 86% 11% ·
1	B	340	88% 10% ·

2 Entry composition (i)

There are 6 unique types of molecules in this entry. The entry contains 5824 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.

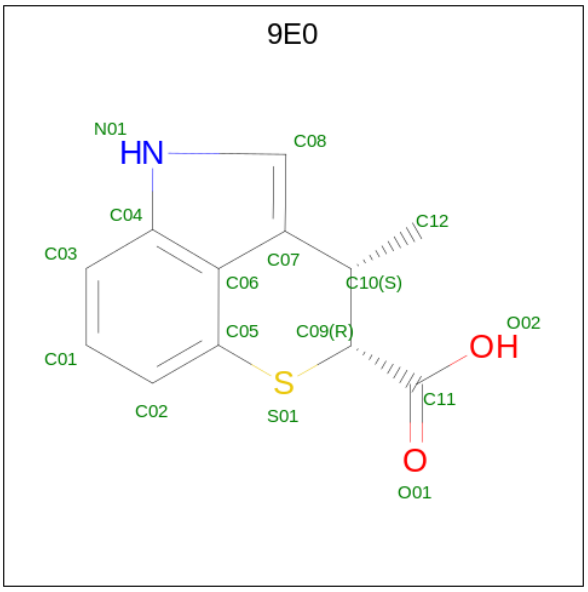
- Molecule 1 is a protein called Tryptophan–tRNA ligase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	330	Total	C	N	O	S	0	2	0
			2553	1620	442	478	13			
1	B	334	Total	C	N	O	S	0	1	0
			2611	1655	450	493	13			

There are 12 discrepancies between the modelled and reference sequences:

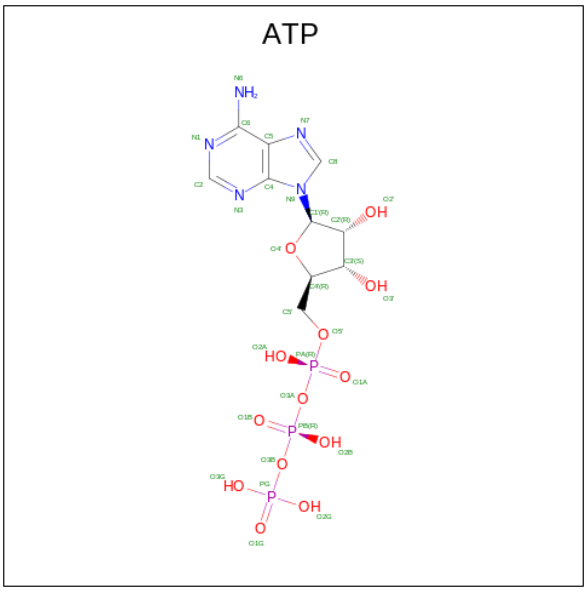
Chain	Residue	Modelled	Actual	Comment	Reference
A	335	HIS	-	expression tag	UNP E2QFN4
A	336	HIS	-	expression tag	UNP E2QFN4
A	337	HIS	-	expression tag	UNP E2QFN4
A	338	HIS	-	expression tag	UNP E2QFN4
A	339	HIS	-	expression tag	UNP E2QFN4
A	340	HIS	-	expression tag	UNP E2QFN4
B	335	HIS	-	expression tag	UNP E2QFN4
B	336	HIS	-	expression tag	UNP E2QFN4
B	337	HIS	-	expression tag	UNP E2QFN4
B	338	HIS	-	expression tag	UNP E2QFN4
B	339	HIS	-	expression tag	UNP E2QFN4
B	340	HIS	-	expression tag	UNP E2QFN4

- Molecule 2 is (5 {S},6 {R})-5-methyl-7-thia-2-azatricyclo[6.3.1.0^{4,12}]dodeca-1(12),3,8,10-tetraene-6-carboxylic acid (CCD ID: 9E0) (formula: $C_{12}H_{11}NO_2S$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	N	O	S	0	0
			16	12	1	2	1		
2	B	1	Total	C	N	O	S	0	0
			16	12	1	2	1		

- Molecule 3 is ADENOSINE-5'-TRIPHOSPHATE (CCD ID: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$) (labeled as "Ligand of Interest" by depositor).



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

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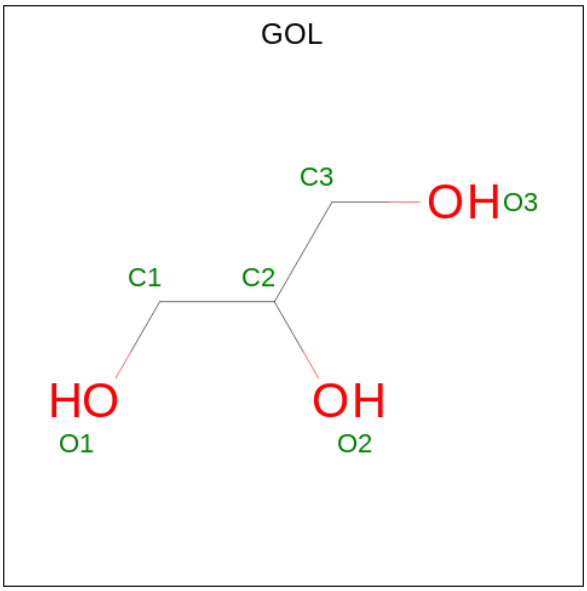
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
3	B	1	Total	C	N	O	P	0	0
			31	10	5	13	3		

- Molecule 4 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

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

- Molecule 5 is GLYCEROL (CCD ID: GOL) (formula: $C_3H_8O_3$).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	B	1	Total	C	O	0	0
			6	3	3		

- Molecule 6 is water.

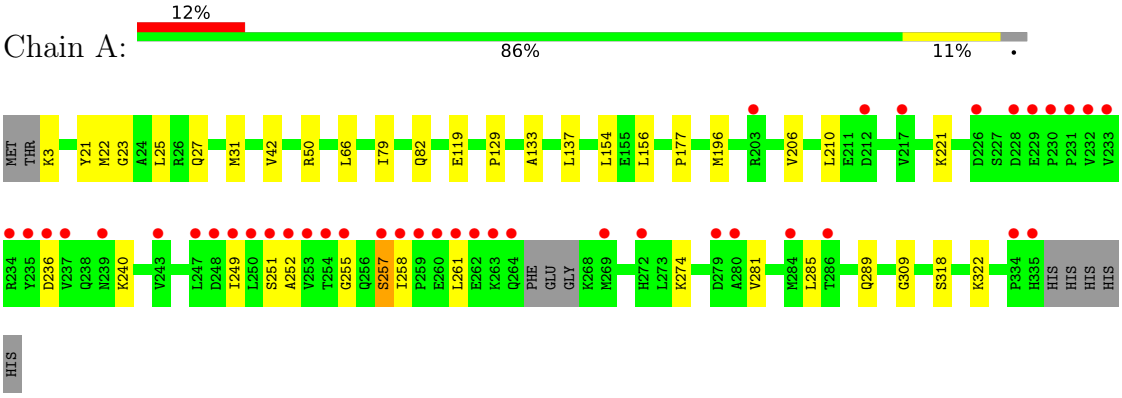
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	230	Total	O	0	0
			230	230		
6	B	328	Total	O	0	0
			328	328		

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.

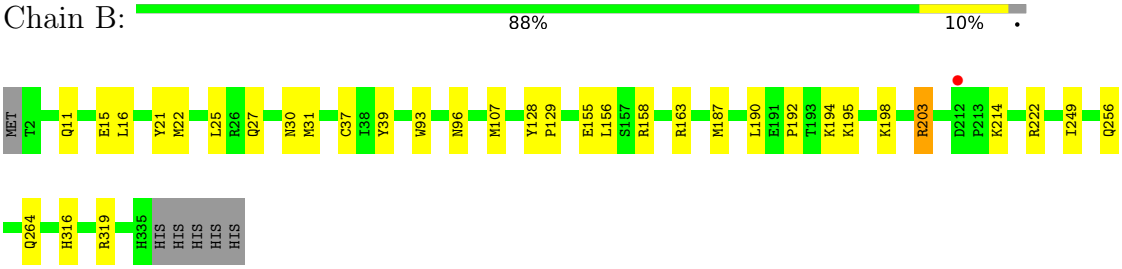
• Molecule 1: Tryptophan–tRNA ligase

Chain A:



• Molecule 1: Tryptophan–tRNA ligase

Chain B:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	63.39Å 95.28Å 64.54Å 90.00° 109.35° 90.00°	Depositor
Resolution (Å)	30.45 – 1.92 30.45 – 1.92	Depositor EDS
% Data completeness (in resolution range)	99.0 (30.45-1.92) 99.2 (30.45-1.92)	Depositor EDS
R_{merge}	0.11	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.49 (at 1.92Å)	Xtriage
Refinement program	PHENIX 1.21.1.5286	Depositor
R, R_{free}	0.182 , 0.209 0.181 , 0.209	Depositor DCC
R_{free} test set	53258 reflections (3.66%)	wwPDB-VP
Wilson B-factor (Å^2)	16.6	Xtriage
Anisotropy	0.739	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.37 , 43.8	EDS
L-test for twinning[2]	$< \|L\| > = 0.51$, $< L^2 > = 0.34$	Xtriage
Estimated twinning fraction	0.012 for l,-k,h	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	5824	wwPDB-VP
Average B, all atoms (Å^2)	20.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.91% 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: ATP, MG, GOL, 9E0

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	0.37	0/2603	0.61	0/3528
1	B	0.36	0/2663	0.57	0/3606
All	All	0.36	0/5266	0.59	0/7134

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	2

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	B	163	ARG	Sidechain
1	B	203	ARG	Sidechain

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	2553	0	2489	24	0
1	B	2611	0	2578	24	0
2	A	16	0	0	0	0
2	B	16	0	0	0	0
3	A	31	0	12	1	0
3	B	31	0	12	0	0
4	A	1	0	0	0	0
4	B	1	0	0	0	0
5	B	6	0	8	0	0
6	A	230	0	0	2	0
6	B	328	0	0	5	0
All	All	5824	0	5099	48	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 5.

All (48) 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:22:MET:HE3	1:A:252:ALA:HB3	1.70	0.74
1:A:285:LEU:O	1:A:289:GLN:HG3	1.91	0.70
1:B:256:GLN:HE22	1:B:264:GLN:HE22	1.41	0.69
1:A:154:LEU:HD12	1:A:177:PRO:HB3	1.77	0.66
1:A:258:ILE:HA	1:A:261:LEU:HB2	1.77	0.66
1:A:257:SER:OG	1:A:258:ILE:N	2.33	0.62
1:A:3:LYS:N	6:A:509:HOH:O	2.38	0.57
1:B:256:GLN:NE2	1:B:264:GLN:HE22	2.03	0.55
1:A:236:ASP:HB3	1:A:240:LYS:HG3	1.88	0.55
1:B:21:TYR:HA	1:B:25:LEU:HB2	1.88	0.55
1:A:196:MET:HG3	1:A:206:VAL:HG22	1.90	0.52
1:A:22:MET:HE1	1:A:249:ILE:HA	1.92	0.52
1:B:107:MET:HE2	1:B:156:LEU:HD22	1.89	0.52
1:B:129:PRO:HB2	1:B:156:LEU:HD23	1.91	0.52
1:A:133:ALA:O	1:A:137:LEU:HG	2.10	0.51
1:B:316:HIS:HD2	1:B:319:ARG:HH12	1.56	0.51
1:A:251:SER:O	1:A:255:GLY:N	2.31	0.51
1:A:318:SER:O	1:A:322:LYS:HG2	2.11	0.50
1:B:15:GLU:O	1:B:198:LYS:HG2	2.12	0.50
1:B:27:GLN:O	1:B:31:MET:HG3	2.11	0.50
1:A:79:ILE:O	1:A:309:GLY:HA3	2.12	0.49
1:A:221:LYS:O	1:A:274:LYS:HE2	2.12	0.49
1:A:50:ARG:NH2	6:A:513:HOH:O	2.42	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:319:ARG:NH2	6:B:505:HOH:O	2.33	0.48
1:B:93:TRP:O	1:B:96:ASN:HB2	2.14	0.47
1:B:190:LEU:HD11	1:B:222:ARG:HH22	1.78	0.47
1:A:129:PRO:HB2	1:A:156:LEU:HD23	1.97	0.47
1:B:22:MET:HE1	1:B:249:ILE:HG23	1.97	0.47
1:B:192:PRO:HG3	6:B:575:HOH:O	2.14	0.46
1:A:27:GLN:O	1:A:31:MET:HG3	2.16	0.46
1:A:119:GLU:H	1:A:119:GLU:CD	2.24	0.46
1:B:37:CYS:HB3	1:B:39:TYR:CE2	2.51	0.46
1:A:66:LEU:HD21	1:A:210:LEU:HD21	1.98	0.46
1:B:194:LYS:HE3	6:B:734:HOH:O	2.14	0.46
1:A:42:VAL:HA	1:A:82:GLN:HB2	1.98	0.45
1:A:21:TYR:HA	1:A:25:LEU:HB2	1.99	0.45
1:A:23:GLY:HA3	3:A:402:ATP:N3	2.32	0.45
1:B:155:GLU:HG2	1:B:158:ARG:HH12	1.82	0.44
1:B:203:ARG:HD2	6:B:518:HOH:O	2.17	0.43
1:B:11:GLN:O	1:B:198:LYS:NZ	2.53	0.42
1:B:16:LEU:HA	1:B:198:LYS:HD3	2.02	0.42
1:A:281:VAL:O	1:A:285:LEU:HG	2.19	0.41
1:B:187:MET:HA	1:B:195:LYS:HA	2.02	0.41
1:A:285:LEU:C	1:A:289:GLN:HG3	2.44	0.41
1:B:128:TYR:HB3	1:B:129:PRO:HD3	2.03	0.41
1:B:30:ASN:HD22	1:B:30:ASN:HA	1.71	0.40
1:B:214:LYS:HG2	6:B:540:HOH:O	2.22	0.40
1:B:107:MET:HE1	1:B:156:LEU:HB2	2.03	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	328/340 (96%)	321 (98%)	6 (2%)	1 (0%)	37 26

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	B	333/340 (98%)	325 (98%)	8 (2%)	0	100 100
All	All	661/680 (97%)	646 (98%)	14 (2%)	1 (0%)	44 34

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	257	SER

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	263/290 (91%)	263 (100%)	0	100 100
1	B	277/290 (96%)	277 (100%)	0	100 100
All	All	540/580 (93%)	540 (100%)	0	100 100

There are no protein residues with a non-rotameric sidechain to report.

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	293	HIS
1	A	304	GLN
1	B	30	ASN
1	B	150	GLN
1	B	238	GLN
1	B	256	GLN
1	B	264	GLN
1	B	316	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)

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 7 ligands modelled in this entry, 2 are monoatomic - leaving 5 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
2	9E0	B	401	-	17,18,18	1.23	1 (5%)	16,27,27	1.37	2 (12%)
2	9E0	A	401	-	17,18,18	1.22	1 (5%)	16,27,27	1.36	2 (12%)
5	GOL	B	403	-	5,5,5	0.32	0	5,5,5	0.44	0
3	ATP	B	402	4	26,33,33	0.68	0	31,52,52	0.79	1 (3%)
3	ATP	A	402	4	26,33,33	0.61	0	31,52,52	0.76	1 (3%)

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	9E0	B	401	-	-	0/3/16/16	0/2/3/3
2	9E0	A	401	-	-	0/3/16/16	0/2/3/3
5	GOL	B	403	-	-	4/4/4/4	-
3	ATP	B	402	4	-	5/18/38/38	0/3/3/3
3	ATP	A	402	4	-	3/18/38/38	0/3/3/3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	401	9E0	C09-S01	3.55	1.86	1.82
2	B	401	9E0	C09-S01	3.11	1.85	1.82

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	401	9E0	C07-C06-C05	3.53	131.34	124.36
2	B	401	9E0	C07-C06-C05	3.38	131.04	124.36
2	B	401	9E0	C02-C05-S01	2.27	123.13	117.95
2	A	401	9E0	O01-C11-C09	-2.18	117.87	122.44
3	B	402	ATP	C5-C6-N6	2.09	123.53	120.35
3	A	402	ATP	C5-C6-N6	2.00	123.40	120.35

There are no chirality outliers.

All (12) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	B	402	ATP	C5'-O5'-PA-O1A
5	B	403	GOL	C1-C2-C3-O3
5	B	403	GOL	O2-C2-C3-O3
3	B	402	ATP	C5'-O5'-PA-O3A
5	B	403	GOL	O1-C1-C2-O2
3	A	402	ATP	PB-O3A-PA-O2A
3	B	402	ATP	PB-O3A-PA-O2A
3	B	402	ATP	PG-O3B-PB-O2B
3	A	402	ATP	C5'-O5'-PA-O3A
3	A	402	ATP	PG-O3B-PB-O2B
3	B	402	ATP	PB-O3A-PA-O1A
5	B	403	GOL	O1-C1-C2-C3

There are no ring outliers.

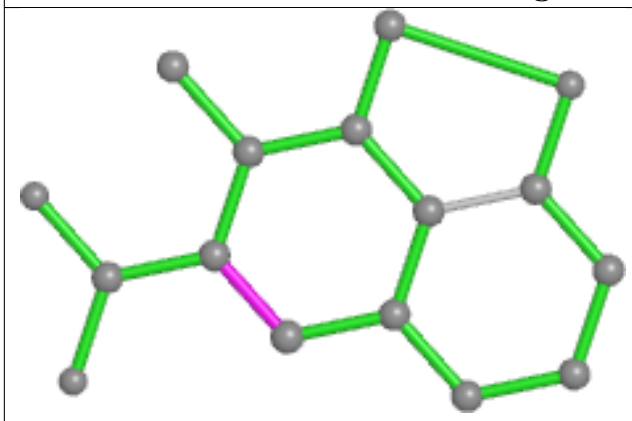
1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	402	ATP	1	0

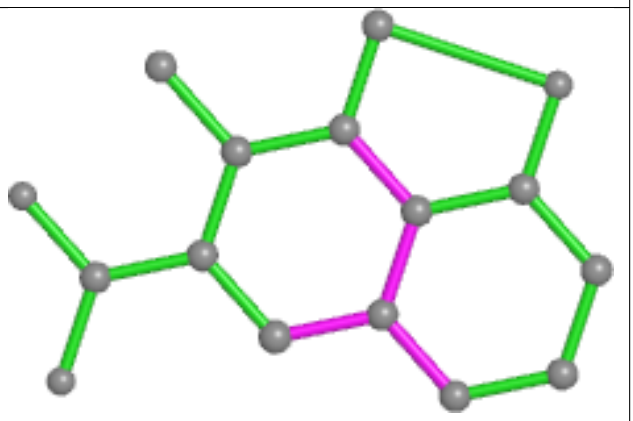
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

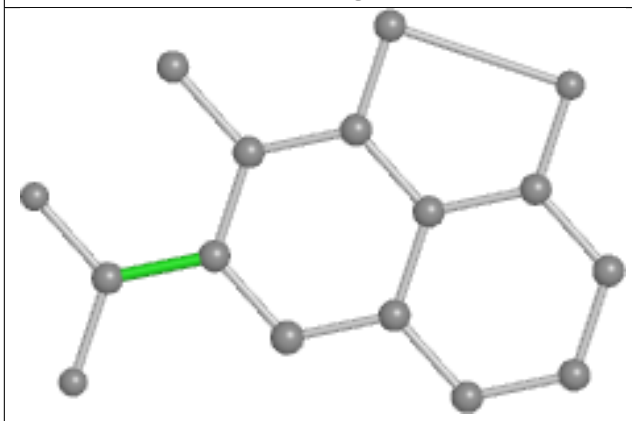
Ligand 9E0 B 401



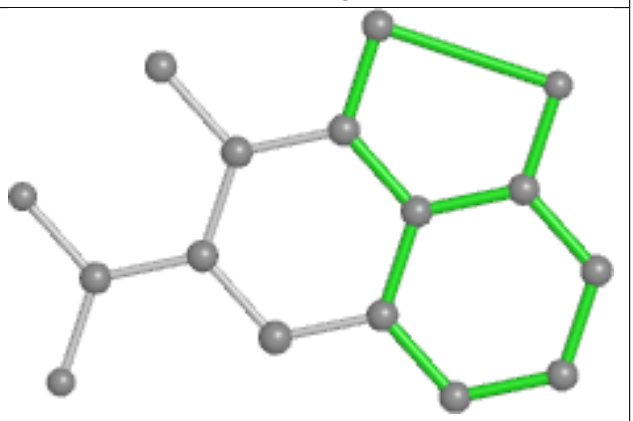
Bond lengths



Bond angles

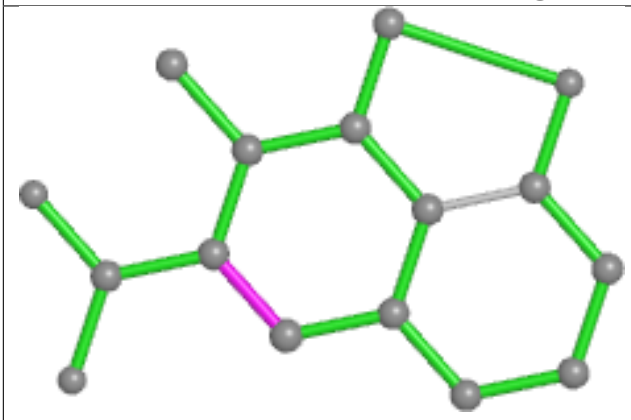


Torsions

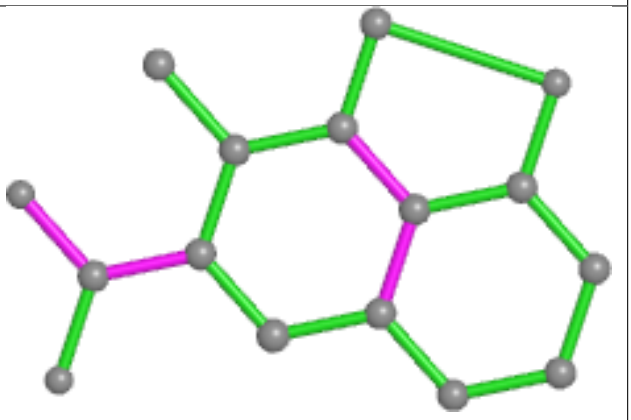


Rings

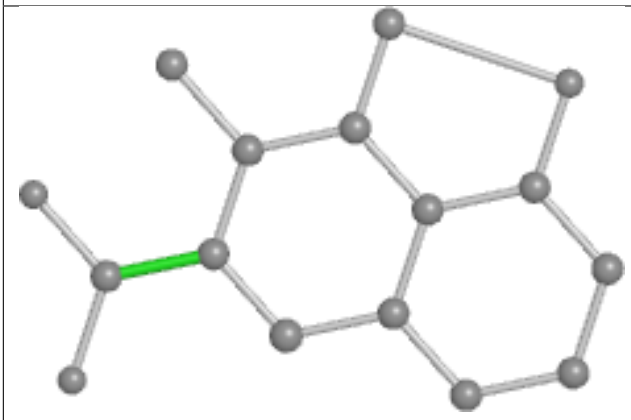
Ligand 9E0 A 401



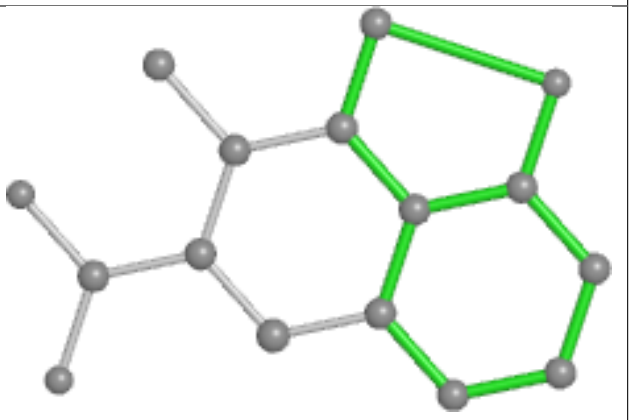
Bond lengths



Bond angles

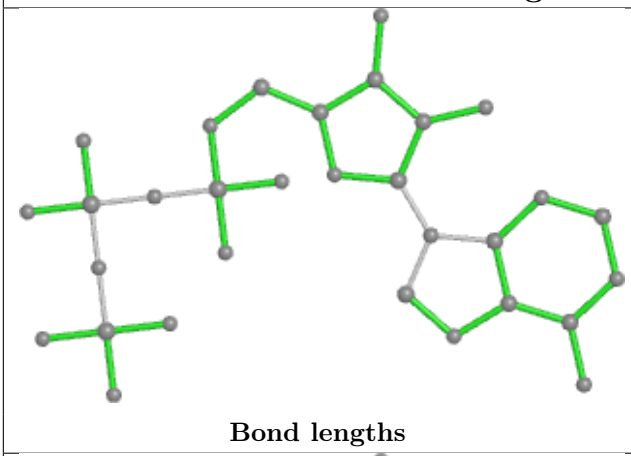


Torsions

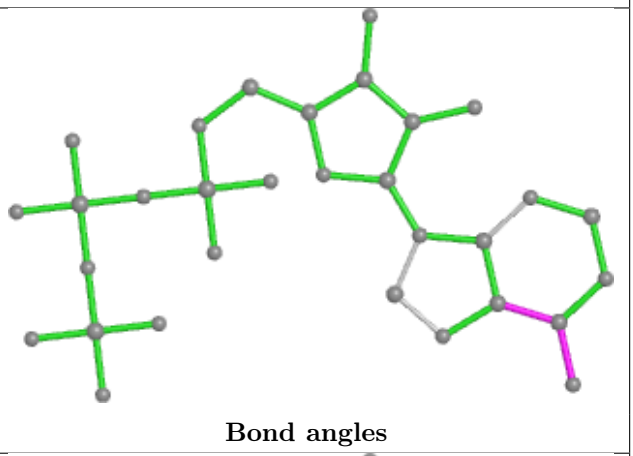


Rings

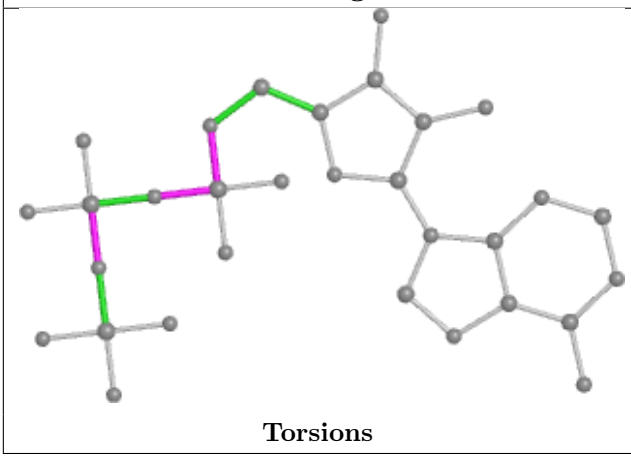
Ligand ATP B 402



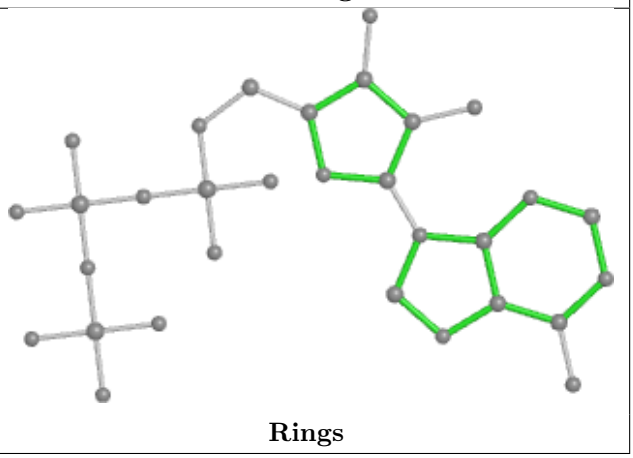
Bond lengths



Bond angles

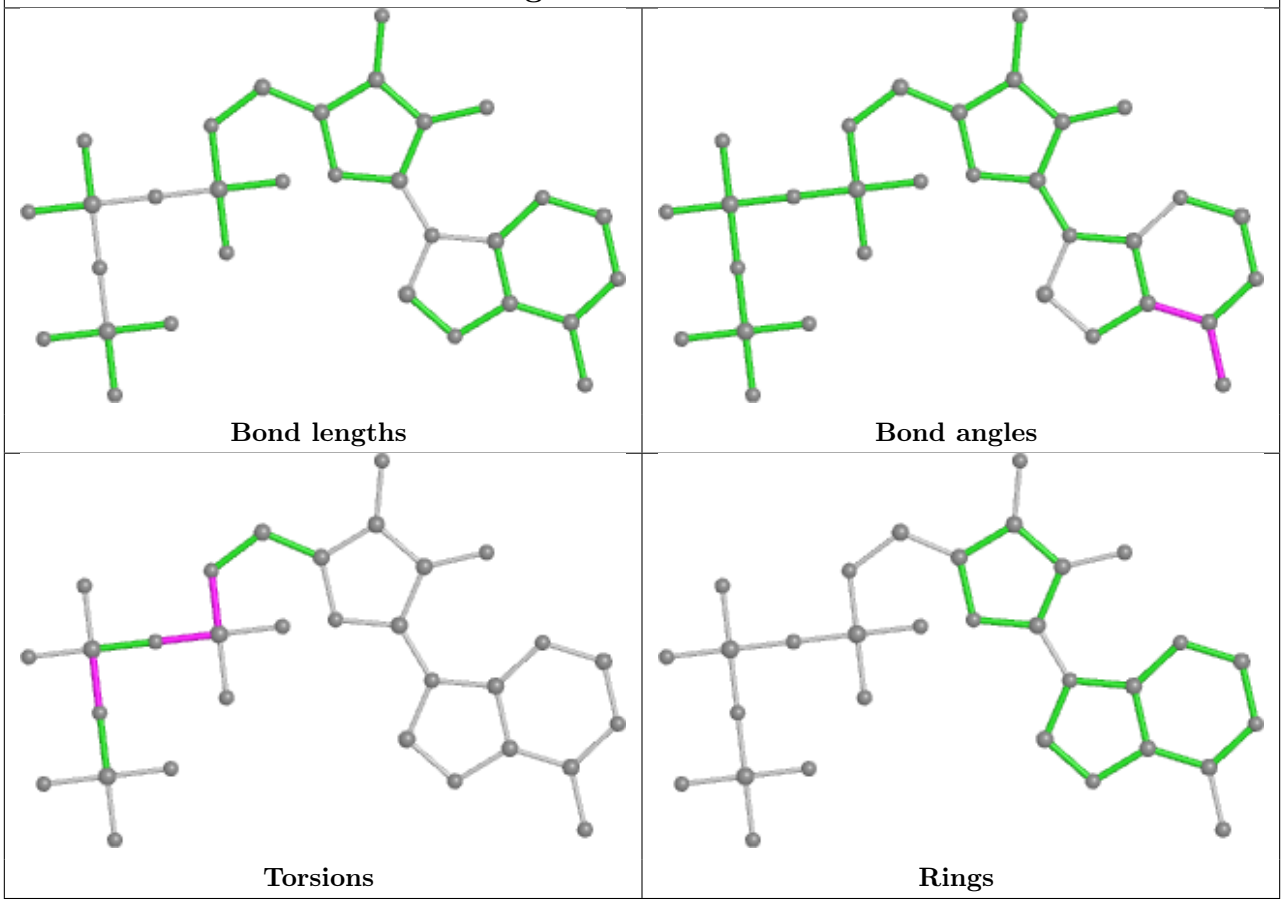


Torsions



Rings

Ligand ATP A 402



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 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	A	330/340 (97%)	0.30	41 (12%) 9 12	6, 19, 58, 67	2 (0%)
1	B	334/340 (98%)	-0.28	1 (0%) 90 93	6, 16, 28, 39	1 (0%)
All	All	664/680 (97%)	0.01	42 (6%) 27 32	6, 17, 45, 67	3 (0%)

All (42) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	252	ALA	5.9
1	A	233	VAL	5.4
1	A	232	VAL	4.8
1	A	286	THR	4.8
1	A	259	PRO	4.7
1	A	258	ILE	4.1
1	A	235	TYR	4.0
1	A	261	LEU	3.9
1	A	255	GLY	3.8
1	A	253	VAL	3.6
1	A	234	ARG	3.6
1	A	248	ASP	3.6
1	A	251	SER	3.5
1	A	264	GLN	3.4
1	A	284	MET	3.3
1	A	237	VAL	3.2
1	A	250	LEU	3.2
1	A	247	LEU	3.1
1	A	279	ASP	3.1
1	A	229	GLU	2.9
1	A	203	ARG	2.8
1	A	243	VAL	2.7
1	A	230	PRO	2.7
1	A	249	ILE	2.6

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Mol	Chain	Res	Type	RSRZ
1	A	334	PRO	2.6
1	A	236	ASP	2.6
1	A	260	GLU	2.6
1	A	280	ALA	2.6
1	A	231	PRO	2.6
1	A	254	THR	2.5
1	A	263	LYS	2.5
1	A	262	GLU	2.5
1	A	335	HIS	2.4
1	A	217	VAL	2.3
1	A	257	SER	2.3
1	A	226	ASP	2.2
1	A	272	HIS	2.2
1	B	212	ASP	2.1
1	A	228	ASP	2.1
1	A	212	ASP	2.1
1	A	239	ASN	2.1
1	A	269	MET	2.0

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

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

6.3 Carbohydrates (i)

There are no oligosaccharides in this entry.

6.4 Ligands (i)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 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
5	GOL	B	403	6/6	0.82	0.13	29,38,41,41	0
2	9E0	B	401	16/16	0.97	0.05	8,11,13,15	0
2	9E0	A	401	16/16	0.97	0.06	9,12,15,15	0
4	MG	B	404	1/1	0.98	0.03	10,10,10,10	0
4	MG	A	403	1/1	0.98	0.03	11,11,11,11	0

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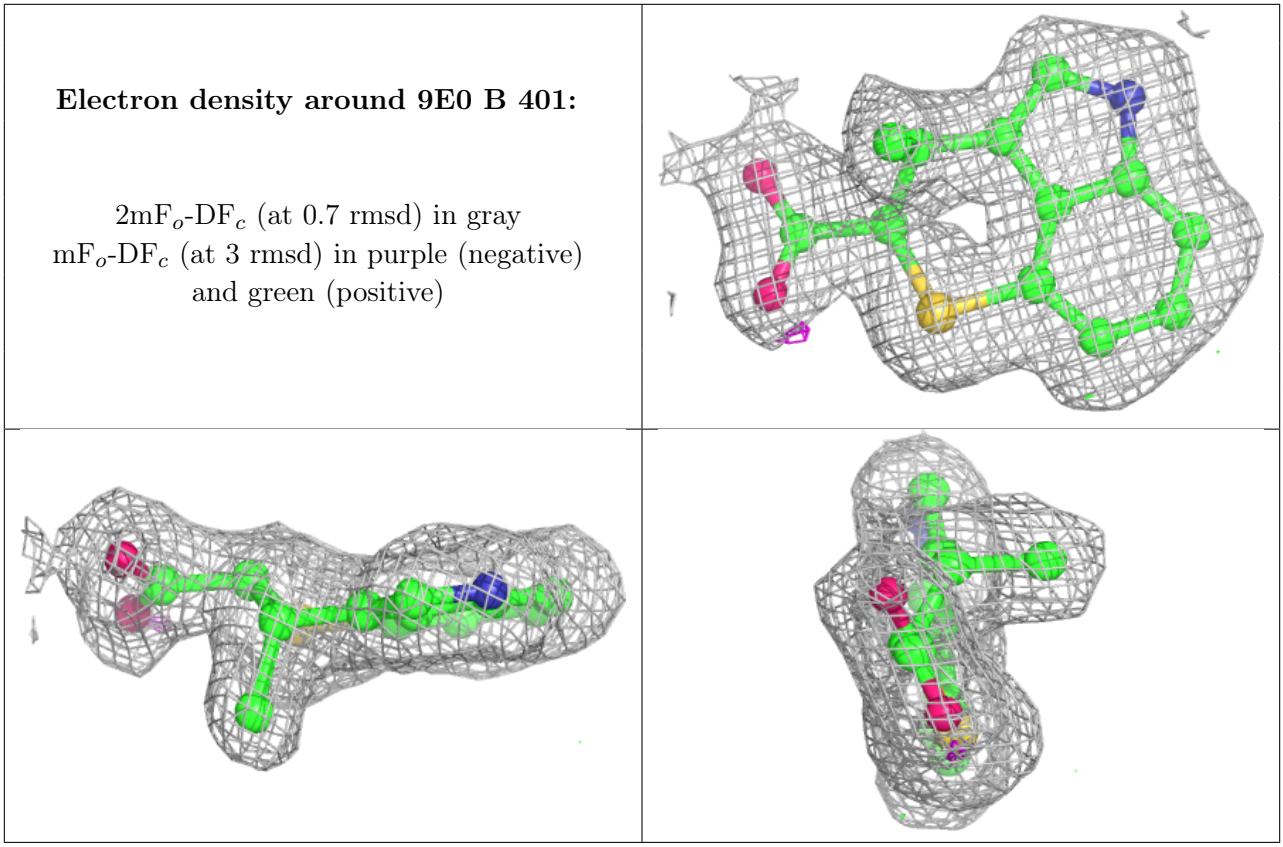
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	ATP	B	402	31/31	0.99	0.04	6,10,12,13	0
3	ATP	A	402	31/31	0.99	0.04	9,12,15,17	0

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.

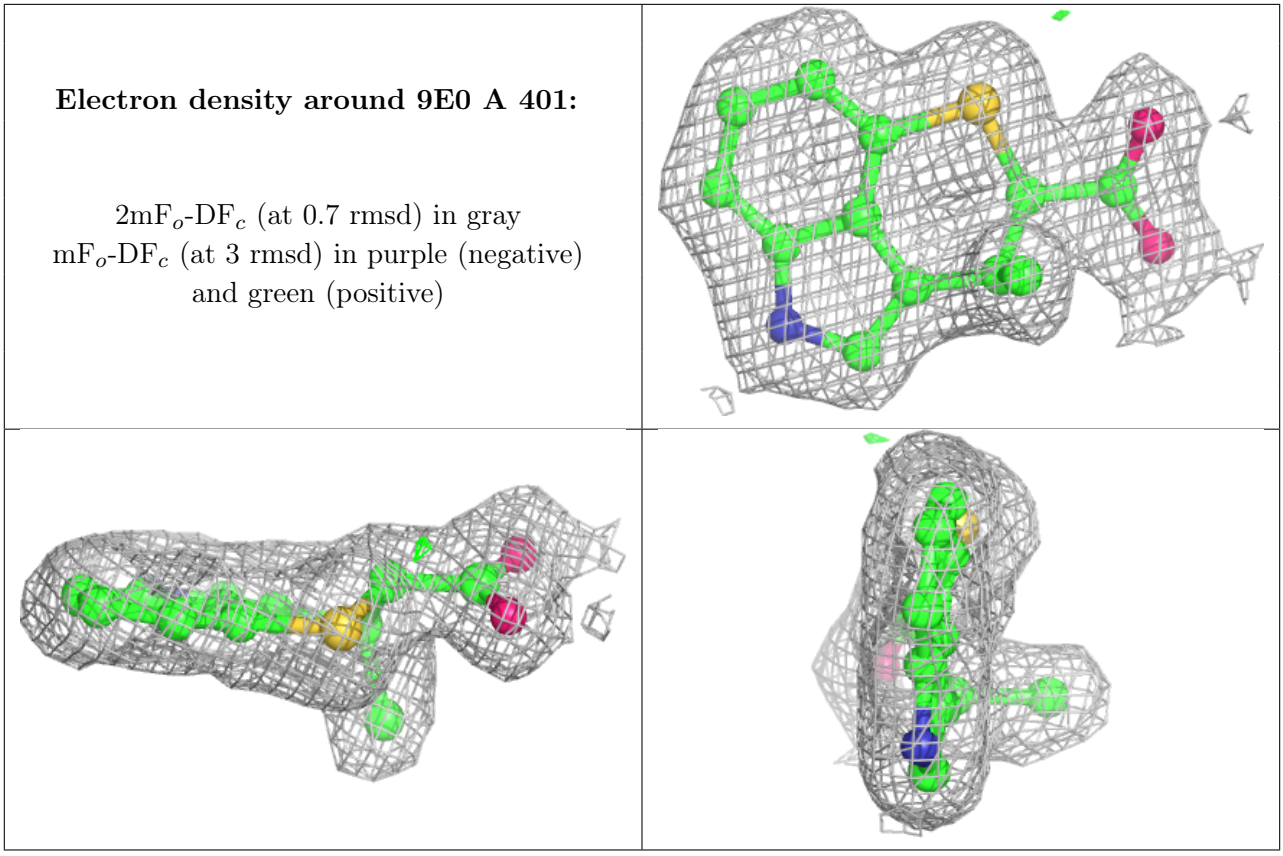
Electron density around 9E0 B 401:

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



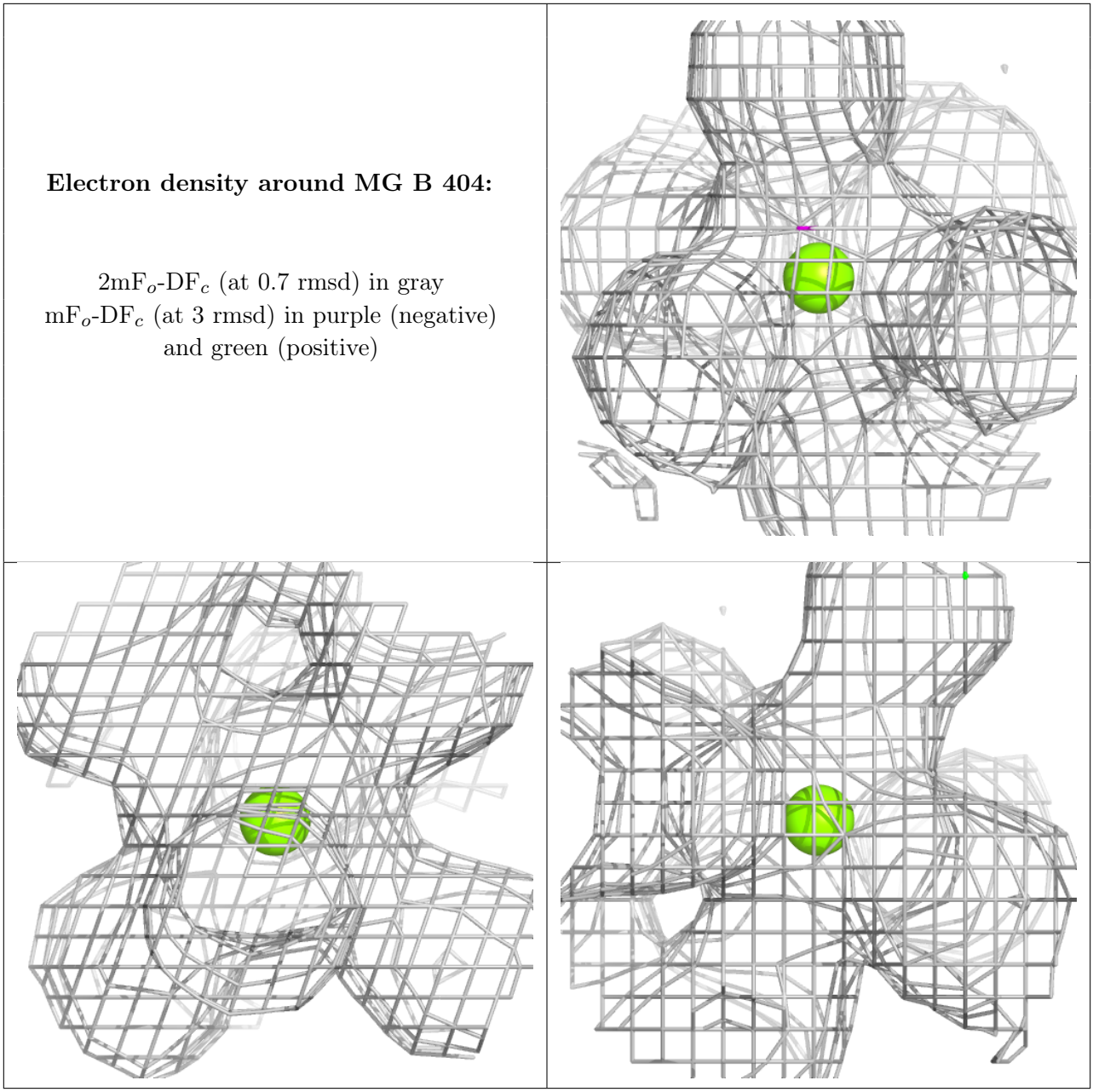
Electron density around 9E0 A 401:

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



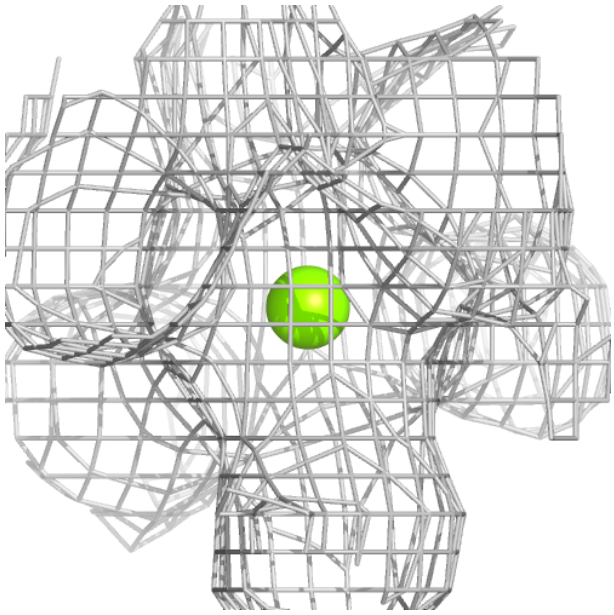
Electron density around MG B 404:

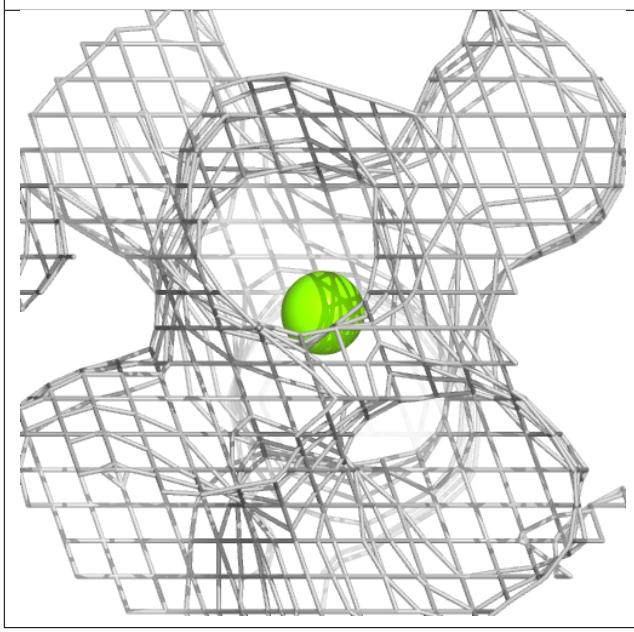
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



Electron density around MG A 403:

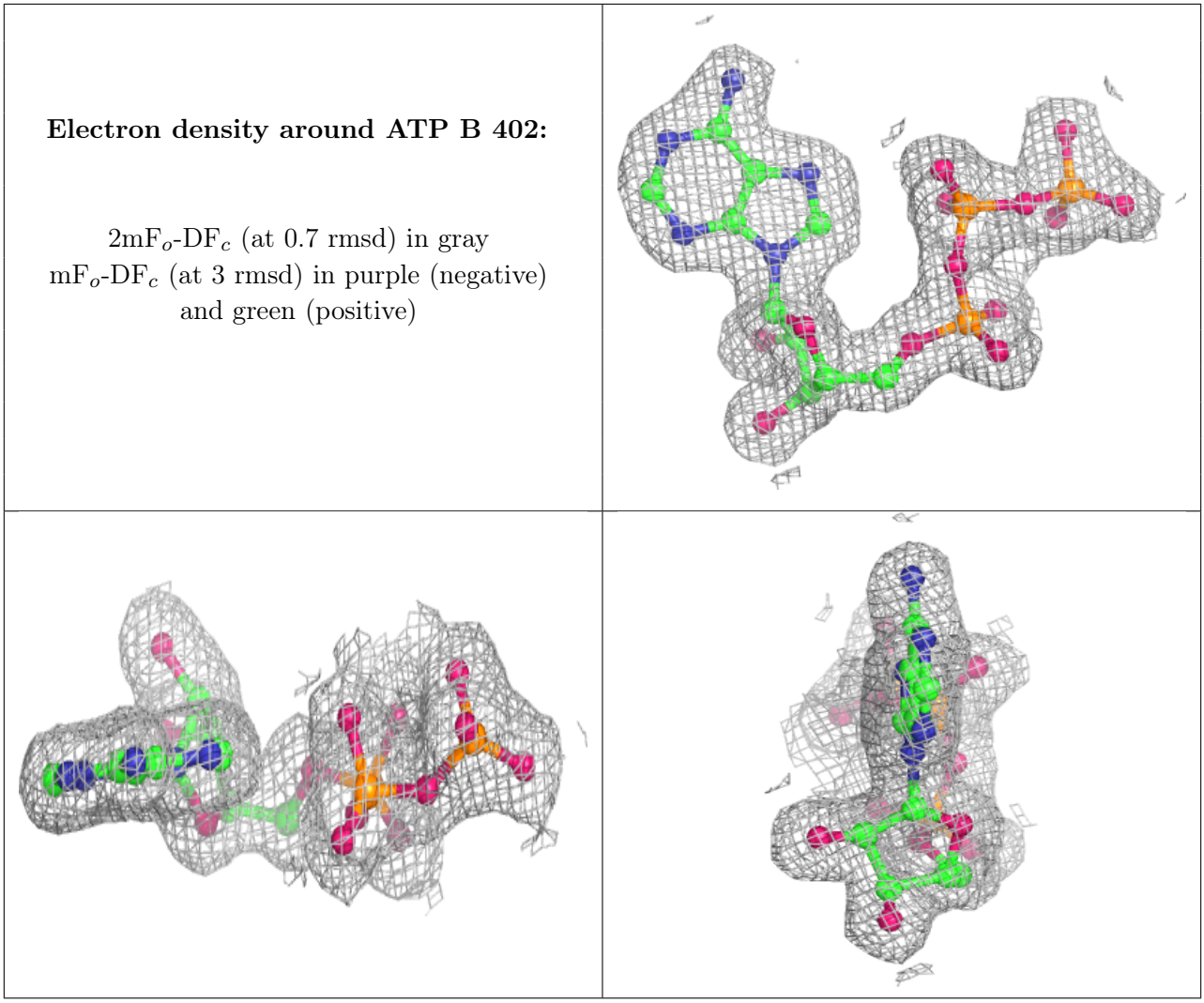
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)





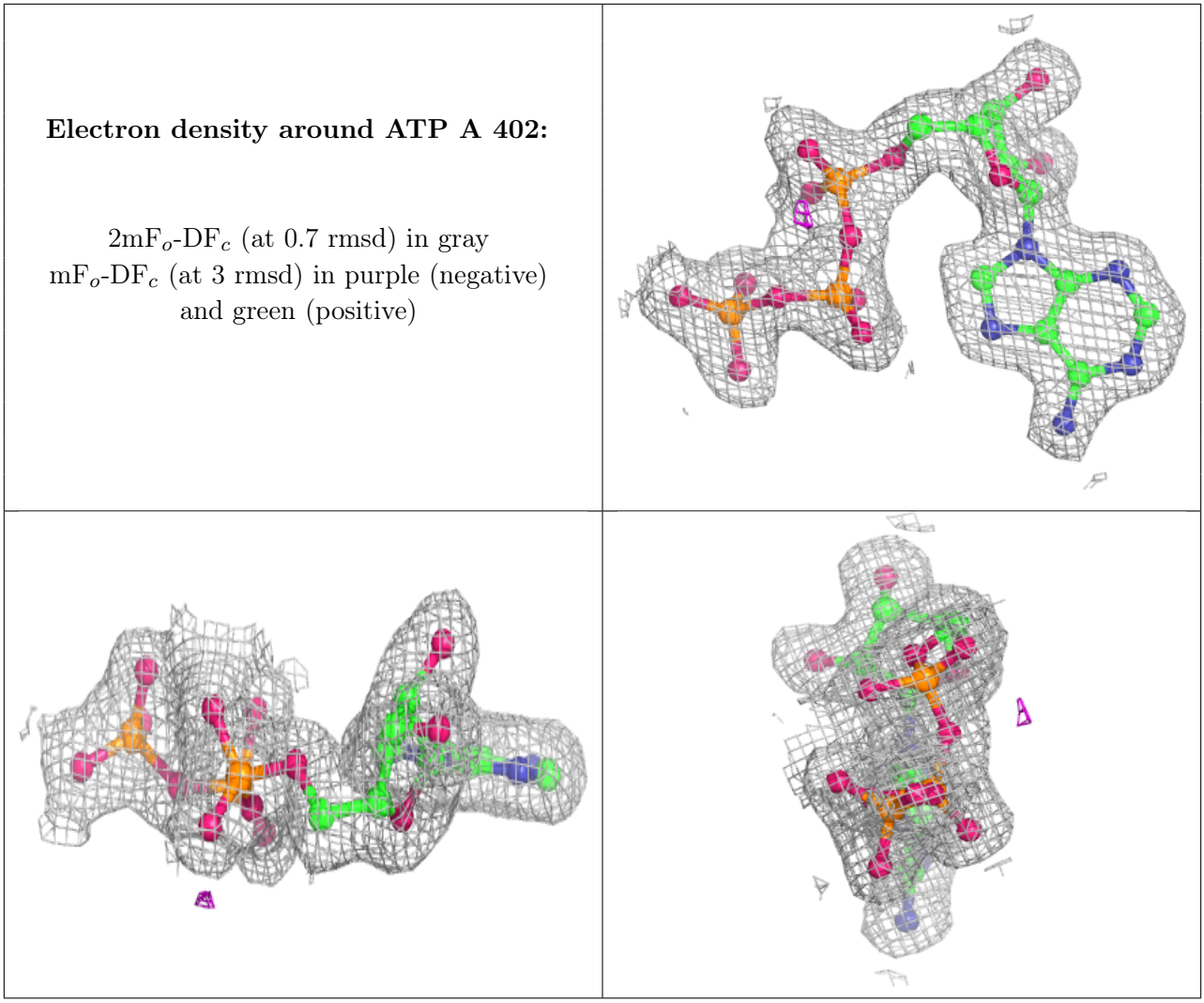
Electron density around ATP B 402:

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



Electron density around ATP 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)



6.5 Other polymers (i)

There are no such residues in this entry.