Full wwPDB X-ray Structure Validation Report (i)

Dec 22, 2020 – 05:07 pm GMT

PDB ID	:	6Z69
Title	:	A novel metagenomic alpha/beta-fold esterase
Authors	:	Bollinger, A.; Thies, S.; Hoeppner, A.; Kobus, S.; Jaeger, K.-E.; Smits, S.H.J.
Deposited on	:	2020-05-28
Resolution	:	1.81 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 following versions of software and data (see references (i)) were used in the production of this report:

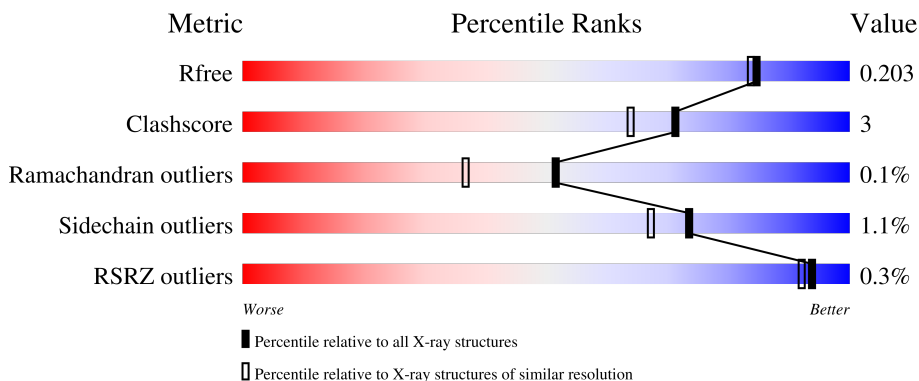|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.16
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.16

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 1.81 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		0.203
Clashscore		3
Ramachandran outliers		0.1%
Sidechain outliers		1.1%
RSRZ outliers		0.3%

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	7484 (1.84-1.80)
Clashscore	141614	8401 (1.84-1.80)
Ramachandran outliers	138981	8290 (1.84-1.80)
Sidechain outliers	138945	8290 (1.84-1.80)
RSRZ outliers	127900	7371 (1.84-1.80)

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	A	376	88% 6% 5%
1	B	376	90% 6% ·

2 Entry composition (i)

There are 5 unique types of molecules in this entry. The entry contains 6482 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 Acetyl esterase/lipase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	357	Total 2713	C 1709	N 486	O 505	S 13	0	3	0
1	B	364	Total 2749	C 1727	N 494	O 515	S 13	0	1	0

There are 18 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	271	VAL	LEU	conflict	UNP A0A1M6Y2K1
A	369	LEU	-	expression tag	UNP A0A1M6Y2K1
A	370	GLU	-	expression tag	UNP A0A1M6Y2K1
A	371	HIS	-	expression tag	UNP A0A1M6Y2K1
A	372	HIS	-	expression tag	UNP A0A1M6Y2K1
A	373	HIS	-	expression tag	UNP A0A1M6Y2K1
A	374	HIS	-	expression tag	UNP A0A1M6Y2K1
A	375	HIS	-	expression tag	UNP A0A1M6Y2K1
A	376	HIS	-	expression tag	UNP A0A1M6Y2K1
B	271	VAL	LEU	conflict	UNP A0A1M6Y2K1
B	369	LEU	-	expression tag	UNP A0A1M6Y2K1
B	370	GLU	-	expression tag	UNP A0A1M6Y2K1
B	371	HIS	-	expression tag	UNP A0A1M6Y2K1
B	372	HIS	-	expression tag	UNP A0A1M6Y2K1
B	373	HIS	-	expression tag	UNP A0A1M6Y2K1
B	374	HIS	-	expression tag	UNP A0A1M6Y2K1
B	375	HIS	-	expression tag	UNP A0A1M6Y2K1
B	376	HIS	-	expression tag	UNP A0A1M6Y2K1

- Molecule 2 is N-HEXYLPHOSPHONATE ETHYL ESTER (three-letter code: HEE) (formula: $C_8H_{19}O_3P$) (labeled as "Ligand of Interest" by depositor).
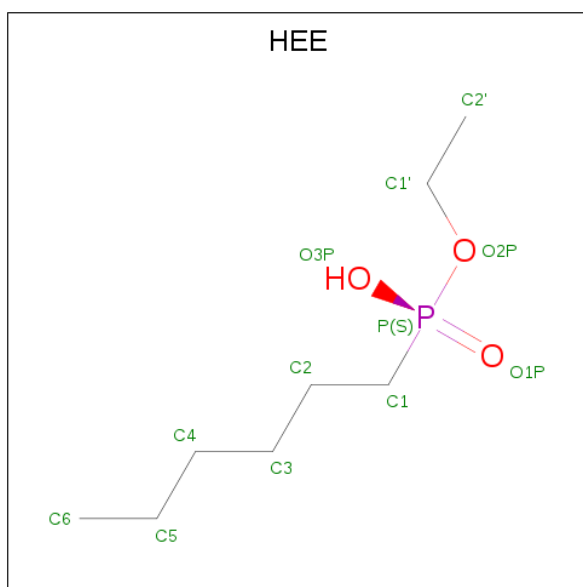
HEE

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total 10	C 7	O 2	P 1	0	0
2	A	1	Total 10	C 7	O 2	P 1	0	0
2	B	1	Total 11	C 7	O 3	P 1	0	0

- Molecule 3 is 7-hydroxy-4-methyl-2H-chromen-2-one (three-letter code: 4MU) (formula: $C_{10}H_8O_3$) (labeled as "Ligand of Interest" by depositor).

4MU
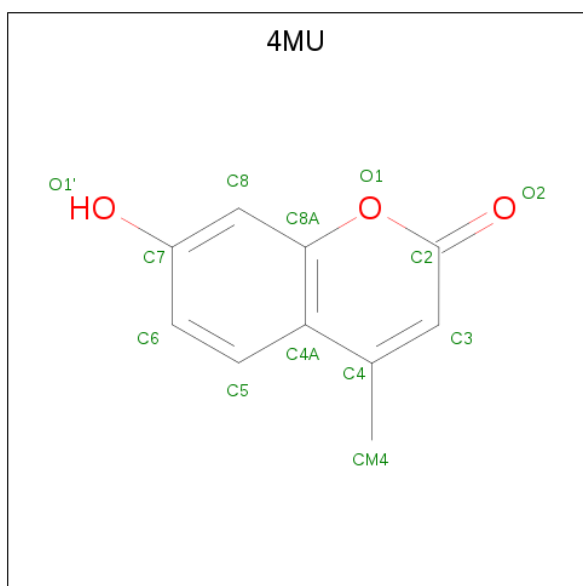
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total C O 13 10 3			0	0
3	A	1	Total C O 13 10 3			0	0

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

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

- Molecule 5 is water.

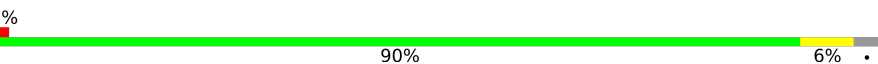| Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	461	Total O 461 461		0	0
5	B	501	Total O 501 501		0	0

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.
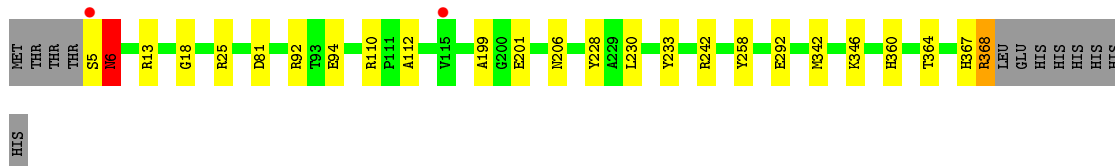
- Molecule 1: Acetyl esterase/lipase
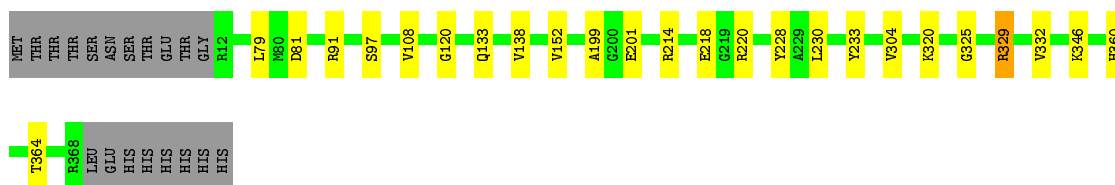
- Molecule 1: Acetyl esterase/lipase

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	72.41Å 86.70Å 110.11Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	43.39 – 1.81 43.35 – 1.81	Depositor EDS
% Data completeness (in resolution range)	98.9 (43.39-1.81) 98.9 (43.35-1.81)	Depositor EDS
R_{merge}	0.12	Depositor
R_{sym}	(Not available)	Depositor
$<I/\sigma(I)>$ [1]	2.01 (at 1.81Å)	Xtriage
Refinement program	REFMAC 5.8.0238	Depositor
R, R_{free}	0.151 , 0.192 0.164 , 0.203	Depositor DCC
R_{free} test set	3152 reflections (5.00%)	wwPDB-VP
Wilson B-factor (Å^2)	15.7	Xtriage
Anisotropy	0.038	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 46.4	EDS
L-test for twinning[2]	$<|L|> = 0.51, <L^2> = 0.35$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	6482	wwPDB-VP
Average B, all atoms (Å^2)	17.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.74% 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.

Full wwPDB X-ray Structure Validation Report

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: HEE, MG, 4MU

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	0.74	1/2789 (0.0%)	0.87	4/3803 (0.1%)
1	B	0.75	0/2819	0.87	2/3844 (0.1%)
All	All	0.75	1/5608 (0.0%)	0.87	6/7647 (0.1%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	329	ARG	NE-CZ	5.16	1.39	1.33

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	329	ARG	NE-CZ-NH2	10.96	125.78	120.30
1	B	6	ASN	CB-CA-C	-7.81	94.77	110.40
1	A	329	ARG	CG-CD-NE	7.28	127.09	111.80
1	A	329	ARG	CD-NE-CZ	5.96	131.94	123.60
1	B	258	TYR	CB-CG-CD1	5.38	124.23	121.00
1	A	220	ARG	NE-CZ-NH2	-5.14	117.73	120.30

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	2713	0	2659	21	0
1	B	2749	0	2683	17	0
2	A	20	0	26	1	0
2	B	11	0	13	0	0
3	A	26	0	15	0	0
4	B	1	0	0	0	0
5	A	461	0	0	7	1
5	B	501	0	0	7	2
All	All	6482	0	5396	38	2

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:367:HIS:O	1:B:368:ARG:HB2	1.75	0.87
1:A:214[A]:ARG:CZ	1:A:218[A]:GLU:OE2	2.26	0.84
1:A:214[A]:ARG:NH1	5:A:501:HOH:O	2.11	0.82
1:A:214[A]:ARG:HH11	1:A:214[A]:ARG:HG3	1.50	0.77
1:B:92:ARG:NH1	1:B:94:GLU:OE2	2.23	0.71
1:B:367:HIS:O	1:B:368:ARG:CB	2.44	0.65
1:A:233:TYR:CD1	2:A:401:HEE:C1'	2.80	0.64
1:A:329:ARG:HD3	5:B:712:HOH:O	1.97	0.64
1:A:214[A]:ARG:NH2	1:A:218[A]:GLU:OE2	2.32	0.62
1:B:5:SER:N	5:B:507:HOH:O	2.34	0.60
1:B:360:HIS:O	1:B:364:THR:HG23	2.03	0.59
1:A:214[A]:ARG:HG3	1:A:214[A]:ARG:NH1	2.14	0.56
1:A:214[B]:ARG:NH1	5:A:501:HOH:O	2.38	0.56
1:A:320:LYS:HE3	5:A:715:HOH:O	2.05	0.56
1:A:201:GLU:HA	1:A:230:LEU:O	2.07	0.54
1:B:25[B]:ARG:NH2	5:B:508:HOH:O	2.38	0.53
1:B:92:ARG:NH2	5:B:510:HOH:O	2.41	0.52
1:B:13:ARG:HD3	5:B:735:HOH:O	2.09	0.51
1:A:214[A]:ARG:NH1	1:A:218[A]:GLU:OE2	2.45	0.49
1:A:364[A]:THR:HG22	5:A:776:HOH:O	2.12	0.49
1:B:81:ASP:O	1:B:346:LYS:HE2	2.14	0.48
1:A:304:VAL:O	1:A:332:VAL:HA	2.14	0.47
1:B:112:ALA:O	5:B:502:HOH:O	2.20	0.47
1:A:360:HIS:O	1:A:364[A]:THR:HG23	2.15	0.46
1:A:91:ARG:HA	1:A:108:VAL:O	2.17	0.45
1:B:342:MET:CE	5:B:801:HOH:O	2.65	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:199:ALA:HA	1:A:228:TYR:O	2.18	0.43
1:A:133:GLN:HG3	5:A:575:HOH:O	2.19	0.43
1:A:325:GLY:HA2	5:A:745:HOH:O	2.18	0.42
1:B:92:ARG:HH22	1:B:110:ARG:HH21	1.67	0.42
1:B:201:GLU:HA	1:B:230:LEU:O	2.19	0.42
1:A:138:VAL:HG12	5:A:762:HOH:O	2.19	0.42
1:A:120:GLY:HA2	1:A:152:VAL:O	2.20	0.41
1:B:199:ALA:HA	1:B:228:TYR:O	2.20	0.41
1:A:79:LEU:O	1:A:346:LYS:HE2	2.20	0.40
1:B:13:ARG:O	1:B:18:GLY:HA3	2.21	0.40
1:B:206:ASN:HB2	1:B:233:TYR:O	2.21	0.40
1:B:230:LEU:HD22	1:B:342:MET:CE	2.52	0.40

All (2) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:517:HOH:O	5:B:837:HOH:O[2_454]	1.94	0.26
5:A:849:HOH:O	5:B:946:HOH:O[3_554]	2.03	0.17

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	358/376 (95%)	347 (97%)	11 (3%)	0	100	100
1	B	363/376 (96%)	347 (96%)	15 (4%)	1 (0%)	41	27
All	All	721/752 (96%)	694 (96%)	26 (4%)	1 (0%)	51	37

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	6	ASN

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	276/291 (95%)	274 (99%)	2 (1%)	84	80
1	B	279/291 (96%)	275 (99%)	4 (1%)	67	58
All	All	555/582 (95%)	549 (99%)	6 (1%)	73	67

All (6) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	81	ASP
1	A	97	SER
1	B	6	ASN
1	B	242	ARG
1	B	292	GLU
1	B	368	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	6	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 6 ligands modelled in this entry, 1 is 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	#$|Z| > 2$
3	4MU	A	403	-	12,14,14	2.76	5 (41%)	16,20,20	2.27	6 (37%)
2	HEE	A	401	1	6,9,11	2.05	1 (16%)	4,9,13	0.85	0
2	HEE	B	401	1	10,10,11	1.94	2 (20%)	10,12,13	2.12	3 (30%)
3	4MU	A	404	2	12,14,14	2.86	6 (50%)	16,20,20	1.46	3 (18%)
2	HEE	A	402	3	6,9,11	0.71	0	4,9,13	0.31	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
3	4MU	A	403	-	-	-	0/2/2/2
2	HEE	A	401	1	-	0/4/8/11	-
2	HEE	B	401	1	-	3/9/10/11	-
3	4MU	A	404	2	-	-	0/2/2/2
2	HEE	A	402	3	-	0/4/8/11	-

All (14) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	404	4MU	C3-C2	6.49	1.50	1.37
3	A	403	4MU	C3-C2	5.94	1.49	1.37
2	B	401	HEE	P-O2P	5.36	1.65	1.57
2	A	401	HEE	O2P-C1'	-4.85	1.33	1.43

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	403	4MU	C8-C7	4.02	1.44	1.37
3	A	403	4MU	C4A-C8A	3.55	1.46	1.41
3	A	404	4MU	C4A-C8A	3.54	1.46	1.41
3	A	403	4MU	C6-C7	3.39	1.45	1.38
3	A	404	4MU	C6-C7	3.28	1.45	1.38
3	A	404	4MU	C8-C8A	-2.89	1.32	1.37
3	A	404	4MU	C4-C4A	-2.85	1.36	1.42
3	A	404	4MU	C8-C7	2.34	1.41	1.37
3	A	403	4MU	C5-C6	2.29	1.41	1.36
2	B	401	HEE	P-C1	2.25	1.83	1.80

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	401	HEE	C3-C2-C1	5.16	123.69	112.61
3	A	403	4MU	C3-C4-C4A	4.71	122.42	117.78
3	A	403	4MU	C4-C4A-C8A	4.70	120.85	118.05
3	A	404	4MU	C4-C4A-C8A	3.75	120.29	118.05
3	A	403	4MU	O1-C8A-C4A	-3.68	117.65	121.20
3	A	403	4MU	CM4-C4-C3	-3.12	116.19	120.74
3	A	403	4MU	O1-C2-C3	2.66	122.66	119.27
2	B	401	HEE	O1P-P-C1	2.56	116.37	109.05
3	A	404	4MU	O1-C2-C3	2.51	122.47	119.27
2	B	401	HEE	O2P-P-O1P	-2.34	108.42	114.05
3	A	404	4MU	C3-C4-C4A	2.32	120.06	117.78
3	A	403	4MU	O1-C8A-C8	2.05	118.46	116.03

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	B	401	HEE	P-C1-C2-C3
2	B	401	HEE	C2-C3-C4-C5
2	B	401	HEE	C1-C2-C3-C4

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	401	HEE	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 4MU A 403

Bond lengths

Bond angles

Torsions

Rings

Ligand HEE A 401

Bond lengths

Bond angles

Torsions

Rings

Ligand HEE B 401

Bond lengths

Bond angles

Torsions

Rings

Ligand 4MU A 404

Bond lengths

Bond angles

Torsions

Rings

Ligand HEE A 402

Bond lengths

Bond angles

Torsions

Rings
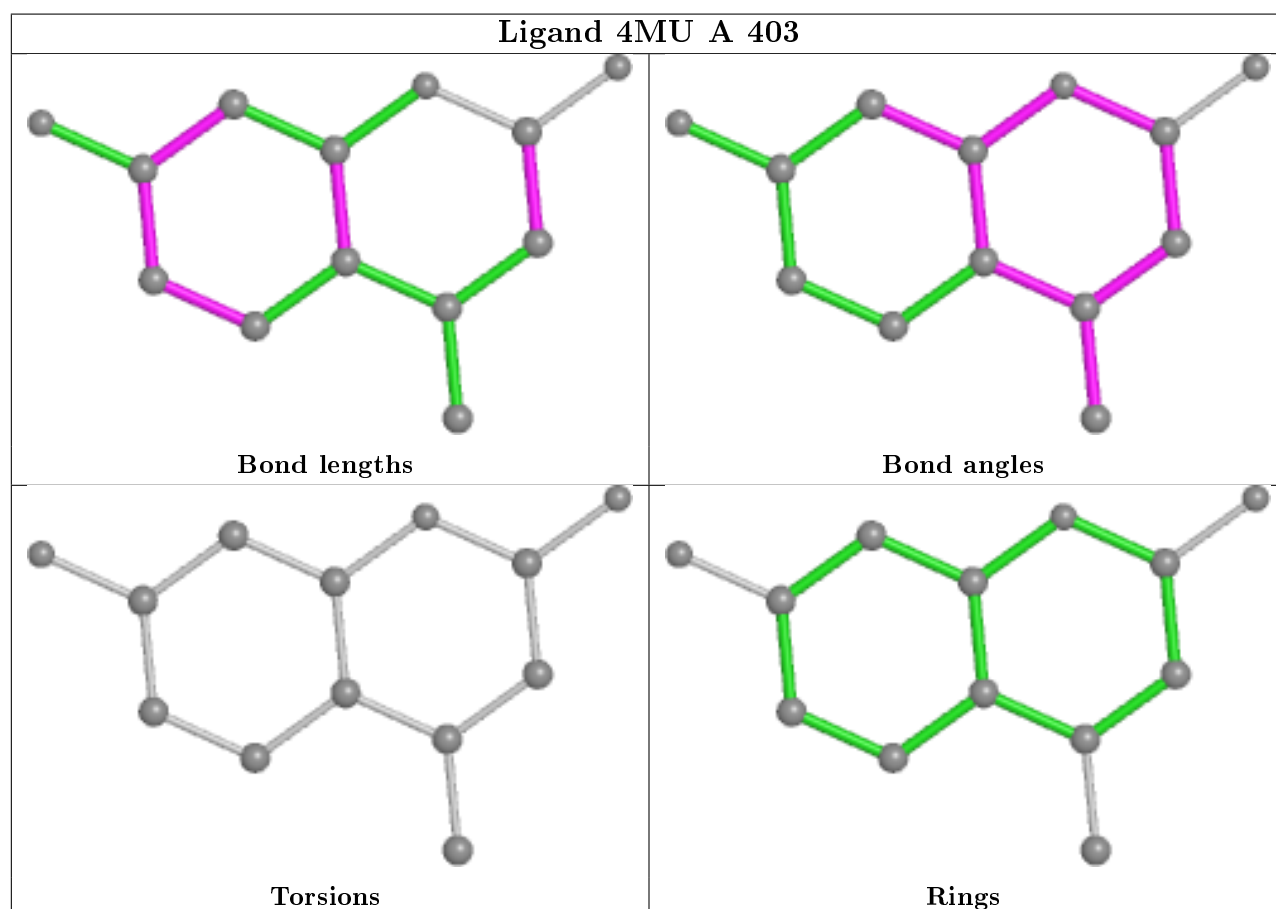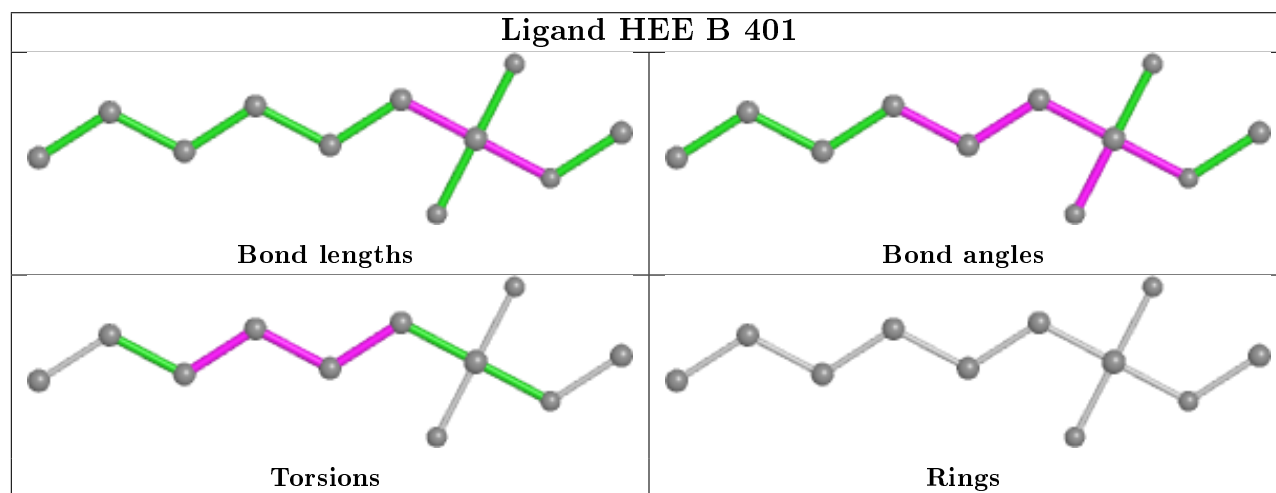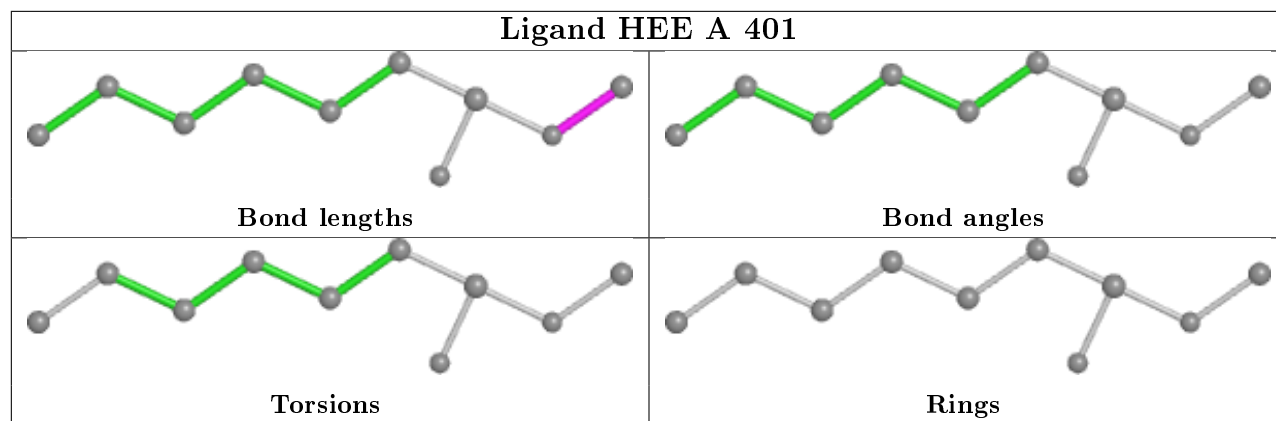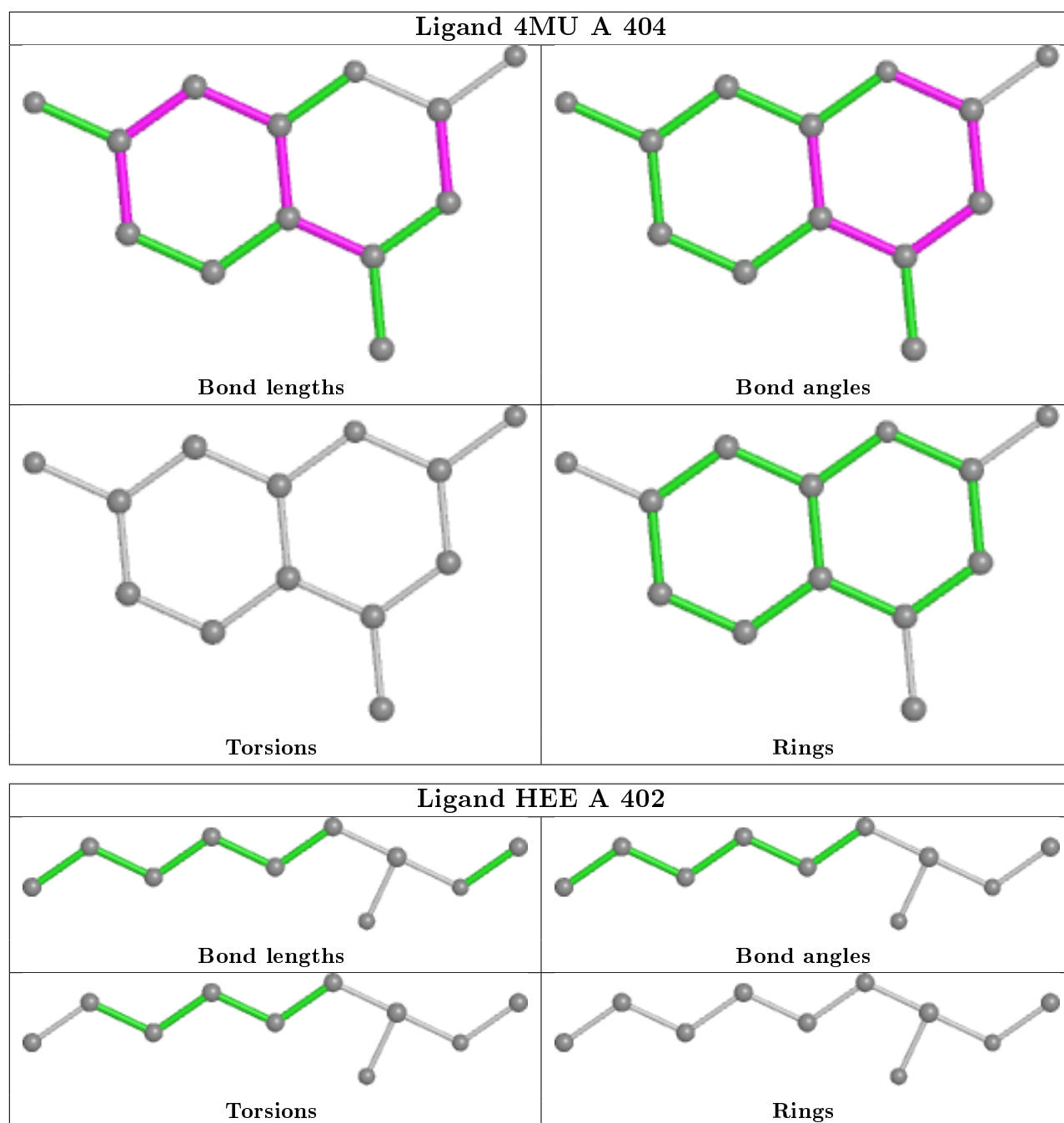
5.7 Other polymers (i)

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(Å²)	Q<0.9
1	A	357/376 (94%)	-0.48	0	100	100	10, 14, 27, 59	0
1	B	364/376 (96%)	-0.55	2 (0%)	91	89	9, 14, 29, 55	0
All	All	721/752 (95%)	-0.51	2 (0%)	94	92	9, 14, 27, 59	0

All (2) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	115	VAL	3.5
1	B	5	SER	3.4

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.
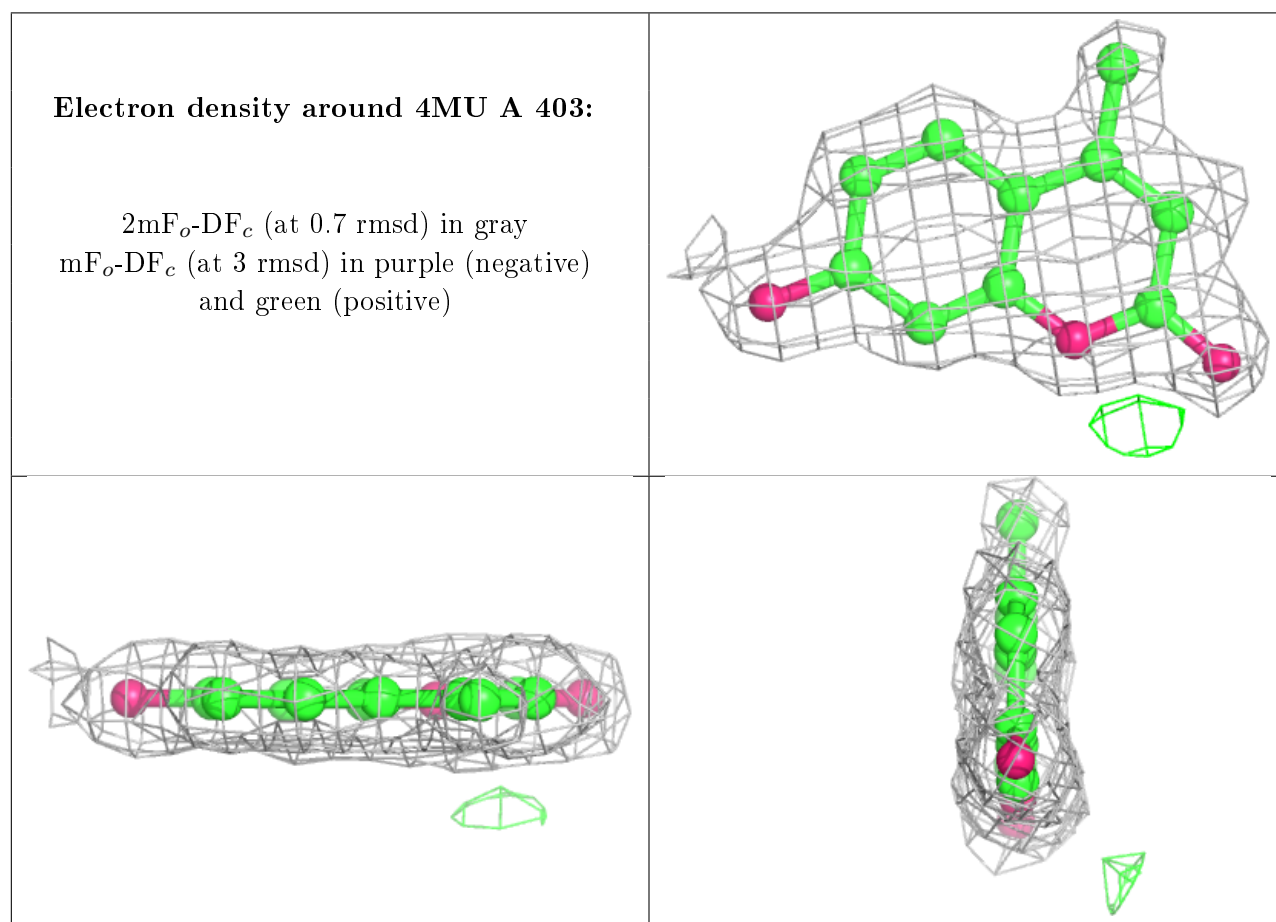
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å²)	Q<0.9
3	4MU	A	403	13/13	0.94	0.10	15,16,17,19	13
2	HEE	B	401	11/12	0.95	0.13	10,14,32,32	0
3	4MU	A	404	13/13	0.95	0.12	16,18,19,24	13

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å²)	Q<0.9
2	HEE	A	402	10/12	0.96	0.13	22,28,31,31	10
2	HEE	A	401	10/12	0.98	0.15	10,17,20,22	10
4	MG	B	402	1/1	0.98	0.10	24,24,24,24	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.
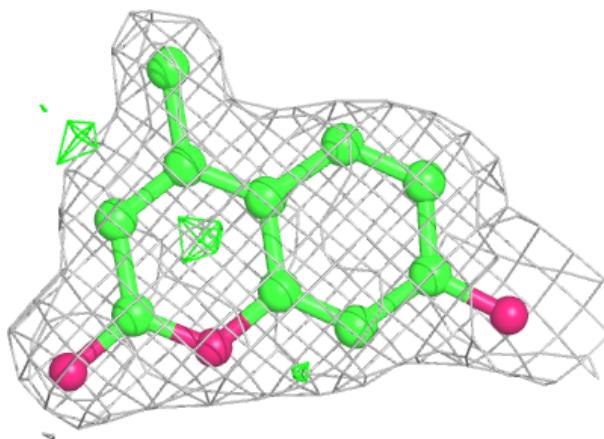

Electron density around 4MU A 403:

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

Electron density around HEE B 401:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
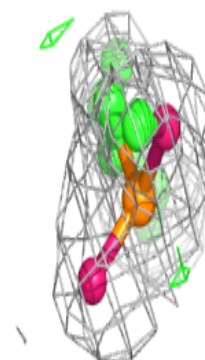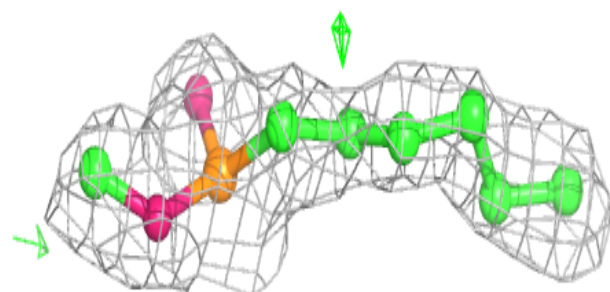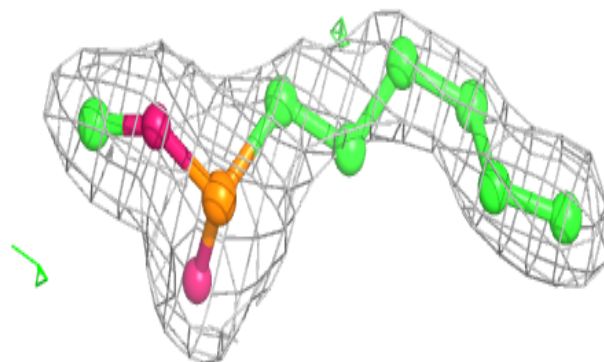and green (positive)
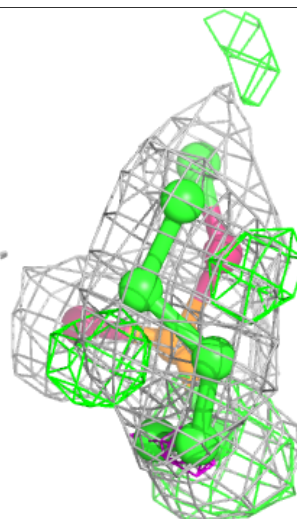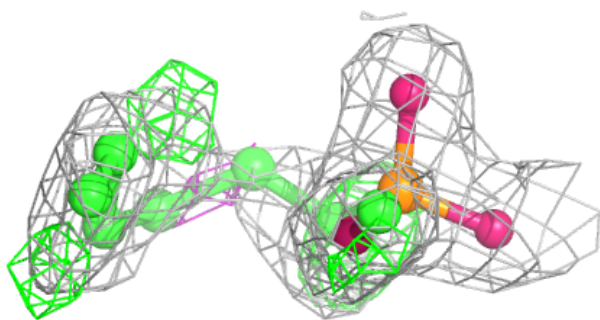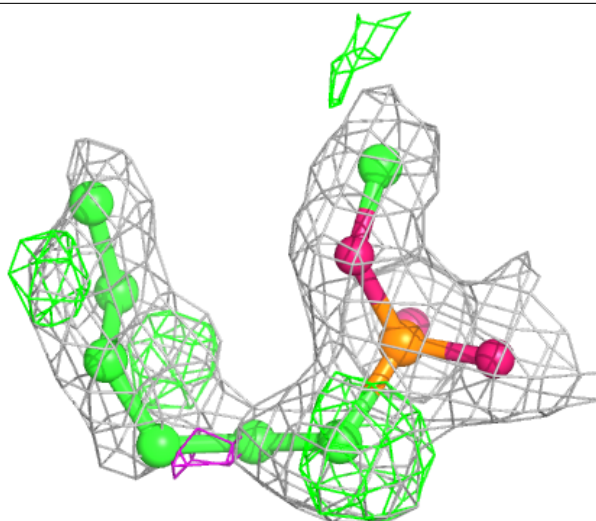
Electron density around 4MU A 404:

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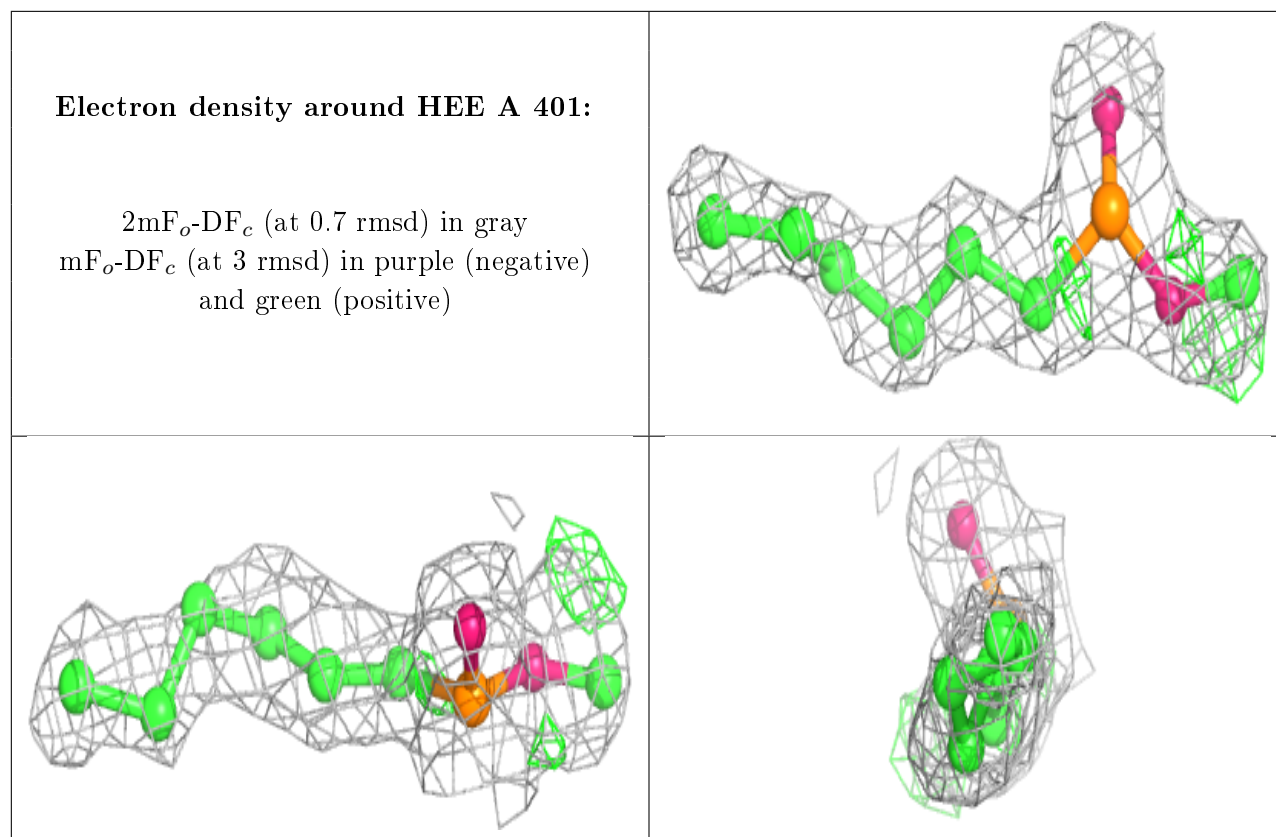mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
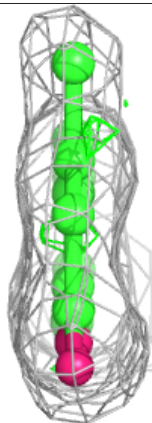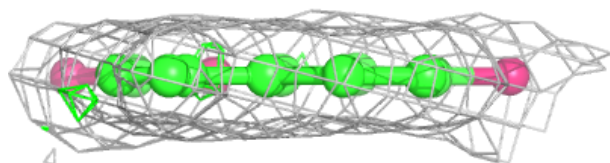
Electron density around HEE A 402:

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

Electron density around HEE 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)

6.5 Other polymers (i)

There are no such residues in this entry.