



# Full wwPDB X-ray Structure Validation Report ⓘ

Sep 5, 2022 – 08:11 PM JST

PDB ID : 7VF8  
Title : Crystal Structure of HasAp with Co-5-octaethyloxaporphyrinium cation  
Authors : Takiguchi, A.; Sakakibara, E.; Sugimoto, H.; Shoji, O.; Shinokubo, H.  
Deposited on : 2021-09-10  
Resolution : 1.35 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](mailto: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>.

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The following versions of software and data (see [references ⓘ](#)) 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	:	2.30
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)	:	2.30

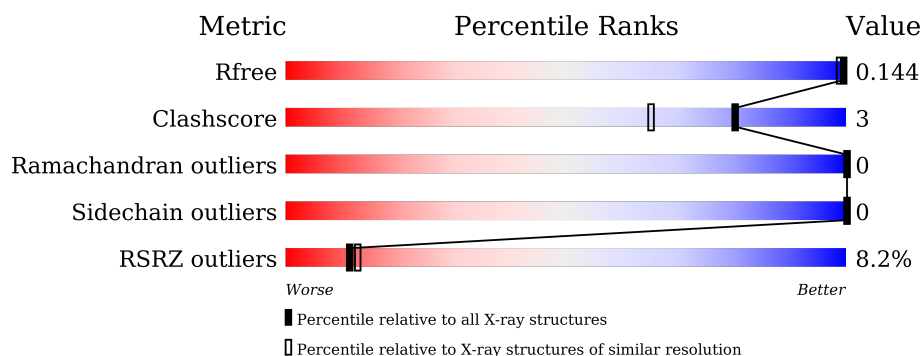
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 1.35 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	1509 (1.38-1.34)
Clashscore	141614	1551 (1.38-1.34)
Ramachandran outliers	138981	1530 (1.38-1.34)
Sidechain outliers	138945	1530 (1.38-1.34)
RSRZ outliers	127900	1487 (1.38-1.34)

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  $\geq 3$ , 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	184	<div> <div style="width: 100%; height: 10px; background-color: red;"></div> <div style="width: 100%; height: 10px; background-color: green;"></div> <div style="position: absolute; left: 0; top: 5px;">%</div> <div style="position: absolute; left: 50%; top: 5px;">94%</div> <div style="position: absolute; right: 0; top: 5px;">5% .</div> </div>
1	B	184	<div> <div style="width: 15%; height: 10px; background-color: red;"></div> <div style="width: 100%; height: 10px; background-color: green;"></div> <div style="position: absolute; left: 15%; top: 5px;">15%</div> <div style="position: absolute; left: 50%; top: 5px;">96%</div> <div style="position: absolute; right: 0; top: 5px;">. .</div> </div>

## 2 Entry composition [i](#)

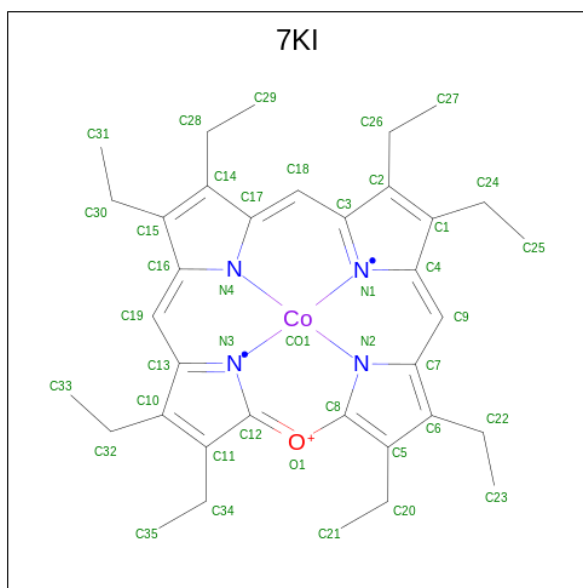
There are 6 unique types of molecules in this entry. The entry contains 3632 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Heme acquisition protein HasAp.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	183	Total	C	N	O	S	0	33	0
			1574	975	258	339	2			
1	B	183	Total	C	N	O	S	0	24	0
			1516	943	253	317	3			

- Molecule 2 is Co-5-octaethyloxaporphyrinium cation (three-letter code: 7KI) (formula:  $C_{35}H_{43}CoN_4O$ ) (labeled as "Ligand of Interest" by depositor).



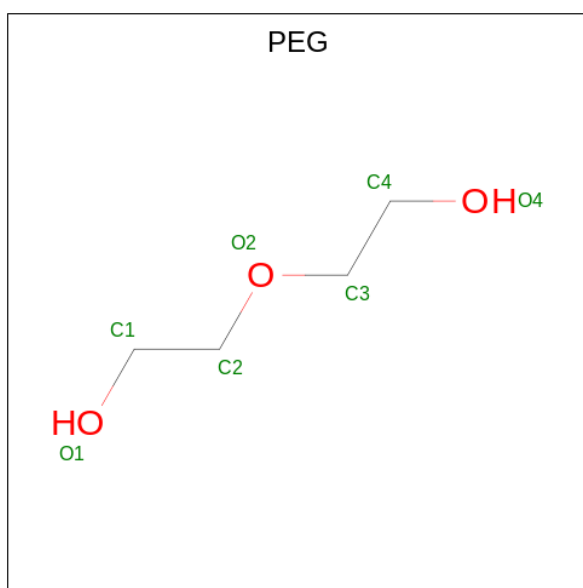
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
2	A	1	Total	C	Co	N	O	0	1
			82	70	2	8	2		
2	B	1	Total	C	Co	N	O	0	1
			82	70	2	8	2		

- Molecule 3 is GLYCEROL (three-letter code: GOL) (formula:  $C_3H_8O_3$ ).



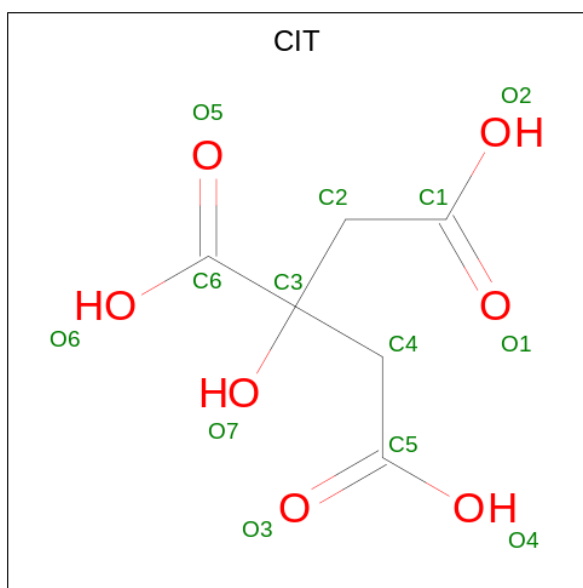
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	C	O	0	0
			6	3	3		
3	A	1	Total	C	O	0	0
			6	3	3		

- Molecule 4 is DI(HYDROXYETHYL)ETHER (three-letter code: PEG) (formula:  $C_4H_{10}O_3$ ).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total	C	O	0	0
			7	4	3		
4	A	1	Total	C	O	0	0
			7	4	3		

- Molecule 5 is CITRIC ACID (three-letter code: CIT) (formula:  $C_6H_8O_7$ ).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	B	1	Total	C	O	0	0
			13	6	7		

- Molecule 6 is water.

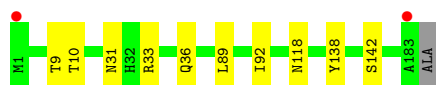
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	198	Total	O	0	0
			198	198		
6	B	141	Total	O	0	0
			141	141		

### 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.

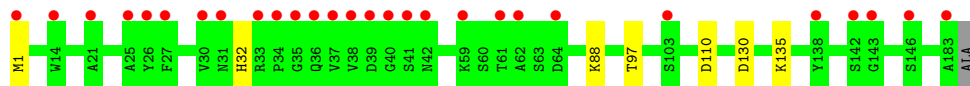
- Molecule 1: Heme acquisition protein HasAp

Chain A:  94% 5% .



- Molecule 1: Heme acquisition protein HasAp

Chain B:  15% 96% . .



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 61	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	153.84Å 153.84Å 37.75Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	44.45 – 1.35 44.41 – 1.35	Depositor EDS
% Data completeness (in resolution range)	98.5 (44.45-1.35) 98.5 (44.41-1.35)	Depositor EDS
$R_{merge}$	0.12	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.35 (at 1.35Å)	Xtriage
Refinement program	REFMAC 5.8.0267	Depositor
R, $R_{free}$	0.128 , 0.144 0.130 , 0.144	Depositor DCC
$R_{free}$ test set	5615 reflections (5.05%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	16.4	Xtriage
Anisotropy	0.026	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.39 , 52.0	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.49$ , $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	0.022 for h,-h-k,-l	Xtriage
$F_o, F_c$ correlation	0.98	EDS
Total number of atoms	3632	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	19.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.91% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical 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: PEG, 7KI, GOL, CIT

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	0.64	0/1608	0.70	0/2194
1	B	0.64	0/1550	0.68	0/2111
All	All	0.64	0/3158	0.69	0/4305

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

### 5.2 Too-close contacts [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	1574	0	1443	7	0
1	B	1516	0	1410	10	0
2	A	82	0	0	0	0
2	B	82	0	0	1	0
3	A	12	0	16	0	0
4	A	14	0	20	0	0
5	B	13	0	5	1	0
6	A	198	0	0	3	0
6	B	141	0	0	2	0
All	All	3632	0	2894	17	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 (17) 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:1[B]:MET:SD	1:B:1[B]:MET:N	2.49	0.84
1:B:1[B]:MET:N	1:B:1[B]:MET:HE3	2.03	0.73
1:B:1[B]:MET:H3	1:B:1[B]:MET:CE	2.04	0.70
1:B:1[B]:MET:N	1:B:1[B]:MET:CE	2.58	0.67
1:A:138[B]:TYR:CZ	1:A:142[B]:SER:OG	2.48	0.66
1:B:88[A]:LYS:NZ	6:B:301:HOH:O	2.34	0.61
1:B:130[B]:ASP:HA	1:B:135[B]:LYS:HE3	1.88	0.56
1:B:88[A]:LYS:HG3	6:B:359:HOH:O	2.06	0.54
1:B:1[B]:MET:HE3	1:B:1[B]:MET:H1	1.72	0.53
1:A:10[B]:THR:HG21	6:A:338:HOH:O	2.09	0.52
1:A:118:ASN:OD1	5:B:202:CIT:H22	2.11	0.51
1:A:31:ASN:HB3	1:A:36[A]:GLN:NE2	2.28	0.49
1:A:89:LEU:HD21	1:A:92[B]:ILE:HD11	1.94	0.47
1:B:32:HIS:CE1	2:B:201[B]:7KI:N3	2.85	0.45
1:B:97:THR:HB	1:B:110:ASP:HB2	2.00	0.43
1:A:33[A]:ARG:NH2	6:A:305:HOH:O	2.51	0.42
1:A:9[B]:THR:HG23	6:A:307:HOH:O	2.19	0.42

There are no symmetry-related clashes.

## 5.3 Torsion angles ⓘ

### 5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	215/184 (117%)	206 (96%)	9 (4%)	0	100	100
1	B	205/184 (111%)	199 (97%)	6 (3%)	0	100	100
All	All	420/368 (114%)	405 (96%)	15 (4%)	0	100	100

There are no Ramachandran outliers to report.

### 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	172/139 (124%)	172 (100%)	0	100	100
1	B	164/139 (118%)	164 (100%)	0	100	100
All	All	336/278 (121%)	336 (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. There are no such sidechains identified.

### 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](#)

9 ligands 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
3	GOL	A	203	-	5,5,5	0.12	0	5,5,5	0.30	0
2	7KI	B	201[B]	1	41,48,48	1.25	2 (4%)	47,78,78	1.10	3 (6%)
4	PEG	A	205	-	6,6,6	0.59	0	5,5,5	0.35	0
5	CIT	B	202	-	12,12,12	1.16	1 (8%)	17,17,17	1.36	3 (17%)
3	GOL	A	202	-	5,5,5	0.13	0	5,5,5	0.43	0
2	7KI	A	201[A]	1	41,48,48	1.62	2 (4%)	47,78,78	1.24	5 (10%)
2	7KI	A	201[B]	1	41,48,48	1.13	2 (4%)	47,78,78	1.10	3 (6%)
4	PEG	A	204	-	6,6,6	0.17	0	5,5,5	0.08	0
2	7KI	B	201[A]	1	41,48,48	1.03	2 (4%)	47,78,78	1.23	5 (10%)

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	GOL	A	203	-	-	4/4/4/4	-
2	7KI	B	201[B]	1	-	6/16/56/56	-
4	PEG	A	205	-	-	1/4/4/4	-
5	CIT	B	202	-	-	6/16/16/16	-
3	GOL	A	202	-	-	0/4/4/4	-
2	7KI	A	201[A]	1	-	8/16/56/56	-
2	7KI	A	201[B]	1	-	2/16/56/56	-
4	PEG	A	204	-	-	2/4/4/4	-
2	7KI	B	201[A]	1	-	2/16/56/56	-

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	201[A]	7KI	O1-C8	-8.93	1.30	1.37
2	B	201[B]	7KI	O1-C8	-5.79	1.32	1.37
2	A	201[B]	7KI	O1-C8	-4.91	1.33	1.37
2	B	201[A]	7KI	O1-C8	-3.75	1.34	1.37
2	A	201[B]	7KI	C5-C8	3.17	1.46	1.38
2	B	201[B]	7KI	C5-C8	2.73	1.45	1.38
2	B	201[A]	7KI	C5-C8	2.58	1.44	1.38
2	A	201[A]	7KI	C9-C4	2.52	1.41	1.35
5	B	202	CIT	O4-C5	-2.16	1.23	1.30

All (19) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	201[A]	7KI	C34-C11-C10	3.81	135.47	127.45
2	B	201[A]	7KI	C29-C28-C14	3.51	122.10	112.43
5	B	202	CIT	O5-C6-C3	-3.20	117.72	122.25
2	B	201[B]	7KI	C34-C11-C10	2.75	133.23	127.45
2	A	201[B]	7KI	C22-C6-C5	2.73	133.50	124.90
2	A	201[A]	7KI	C20-C5-C6	2.71	133.44	124.90
2	A	201[A]	7KI	C18-C3-C2	-2.46	121.23	124.84
2	B	201[A]	7KI	C2-C3-N1	2.40	113.23	110.93
2	A	201[B]	7KI	C23-C22-C6	2.38	118.34	112.27
2	B	201[B]	7KI	C22-C6-C5	2.34	132.26	124.90
5	B	202	CIT	O6-C6-C3	2.30	117.05	113.05
2	B	201[A]	7KI	C24-C1-C4	2.26	127.74	124.81
2	B	201[A]	7KI	C4-N1-C3	-2.20	102.75	105.05
2	A	201[B]	7KI	C9-C4-C1	-2.20	121.20	125.33
2	B	201[B]	7KI	C23-C22-C6	2.17	117.79	112.27
2	A	201[A]	7KI	C34-C11-C12	-2.15	119.09	123.89
2	A	201[A]	7KI	C2-C3-N1	2.14	112.98	110.93
2	B	201[A]	7KI	C34-C11-C10	2.12	131.92	127.45
5	B	202	CIT	O1-C1-C2	-2.07	116.90	122.94

There are no chirality outliers.

All (31) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	201[A]	7KI	C12-C11-C34-C35
2	A	201[A]	7KI	C23-C22-C6-C5
2	A	201[A]	7KI	C23-C22-C6-C7
2	A	201[B]	7KI	C23-C22-C6-C5
2	A	201[B]	7KI	C23-C22-C6-C7
2	B	201[B]	7KI	C23-C22-C6-C5
2	B	201[B]	7KI	C23-C22-C6-C7
3	A	203	GOL	C1-C2-C3-O3
5	B	202	CIT	C2-C3-C4-C5
5	B	202	CIT	O7-C3-C4-C5
5	B	202	CIT	C6-C3-C4-C5
2	A	201[A]	7KI	C10-C11-C34-C35
2	B	201[B]	7KI	C10-C11-C34-C35
3	A	203	GOL	O1-C1-C2-C3
3	A	203	GOL	O1-C1-C2-O2
3	A	203	GOL	O2-C2-C3-O3
4	A	204	PEG	O1-C1-C2-O2
2	B	201[A]	7KI	C14-C15-C30-C31
2	B	201[B]	7KI	C12-C11-C34-C35

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Mol	Chain	Res	Type	Atoms
2	A	201[A]	7KI	C11-C10-C32-C33
2	B	201[A]	7KI	C16-C15-C30-C31
4	A	205	PEG	C4-C3-O2-C2
2	B	201[B]	7KI	C1-C2-C26-C27
2	A	201[A]	7KI	C21-C20-C5-C8
2	B	201[B]	7KI	C11-C10-C32-C33
2	A	201[A]	7KI	C21-C20-C5-C6
5	B	202	CIT	C1-C2-C3-C4
5	B	202	CIT	C3-C4-C5-O3
5	B	202	CIT	C3-C4-C5-O4
4	A	204	PEG	C1-C2-O2-C3
2	A	201[A]	7KI	C13-C10-C32-C33

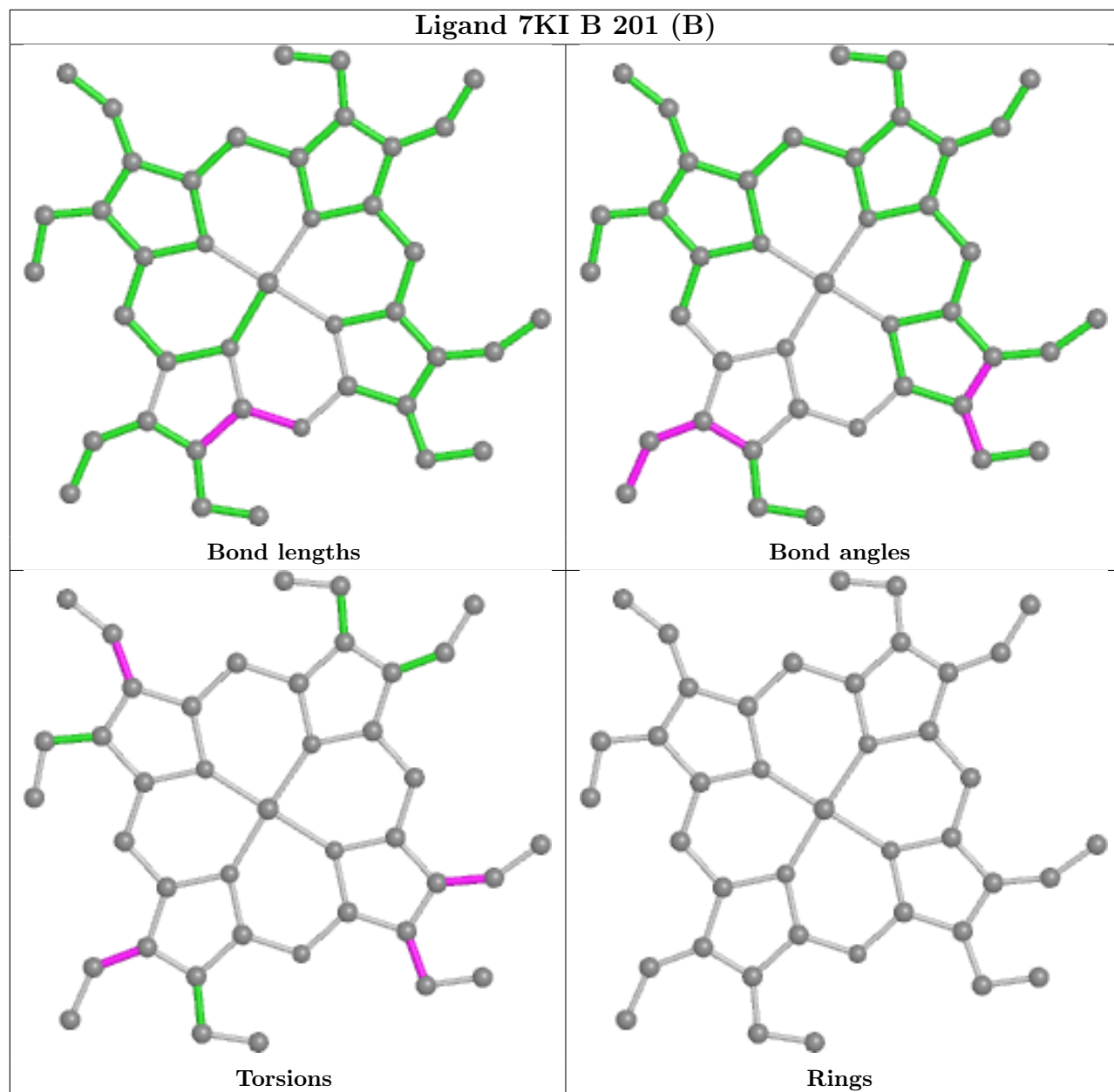
There are no ring outliers.

2 monomers are involved in 2 short contacts:

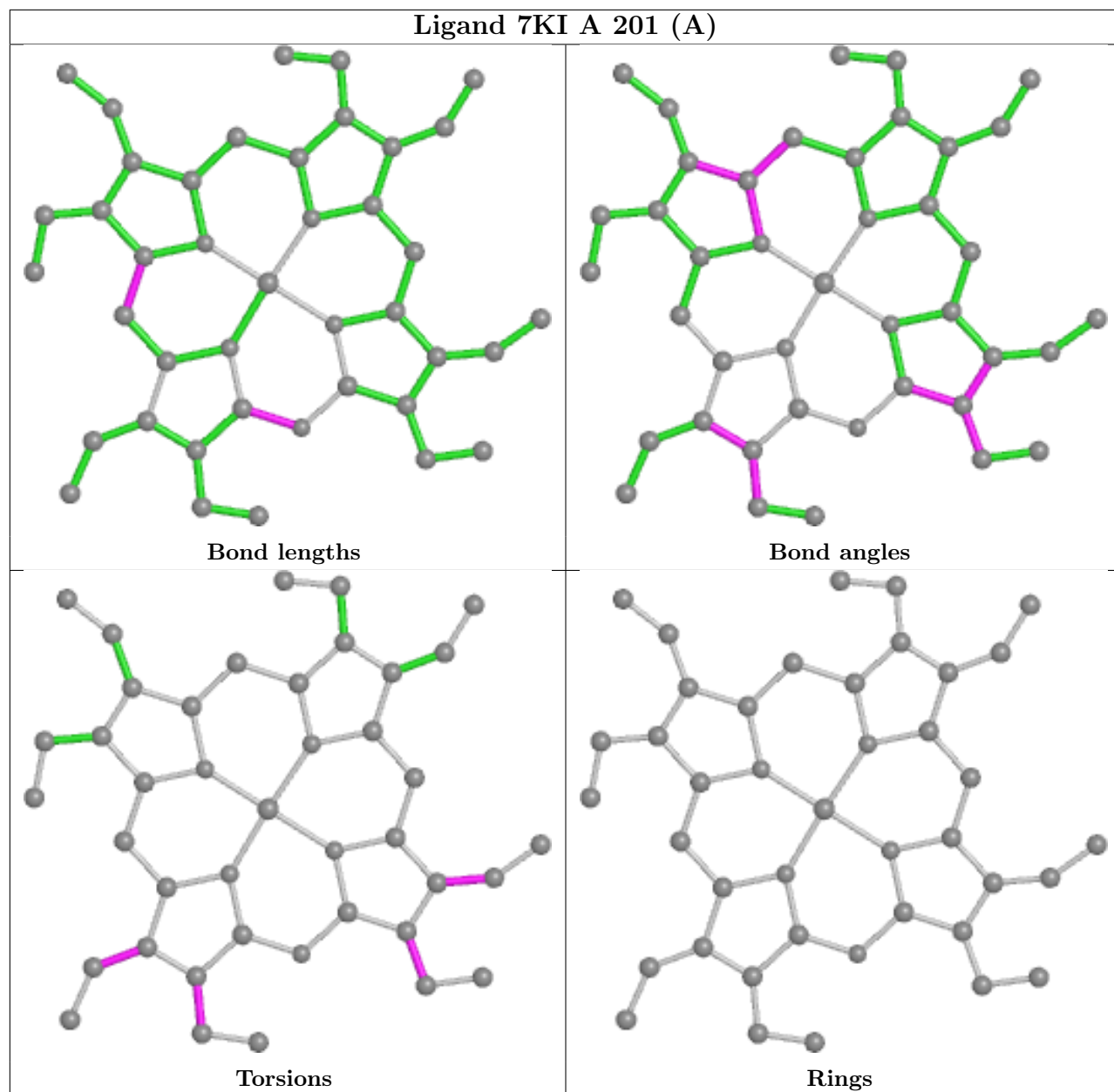
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	201[B]	7KI	1	0
5	B	202	CIT	1	0

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 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.

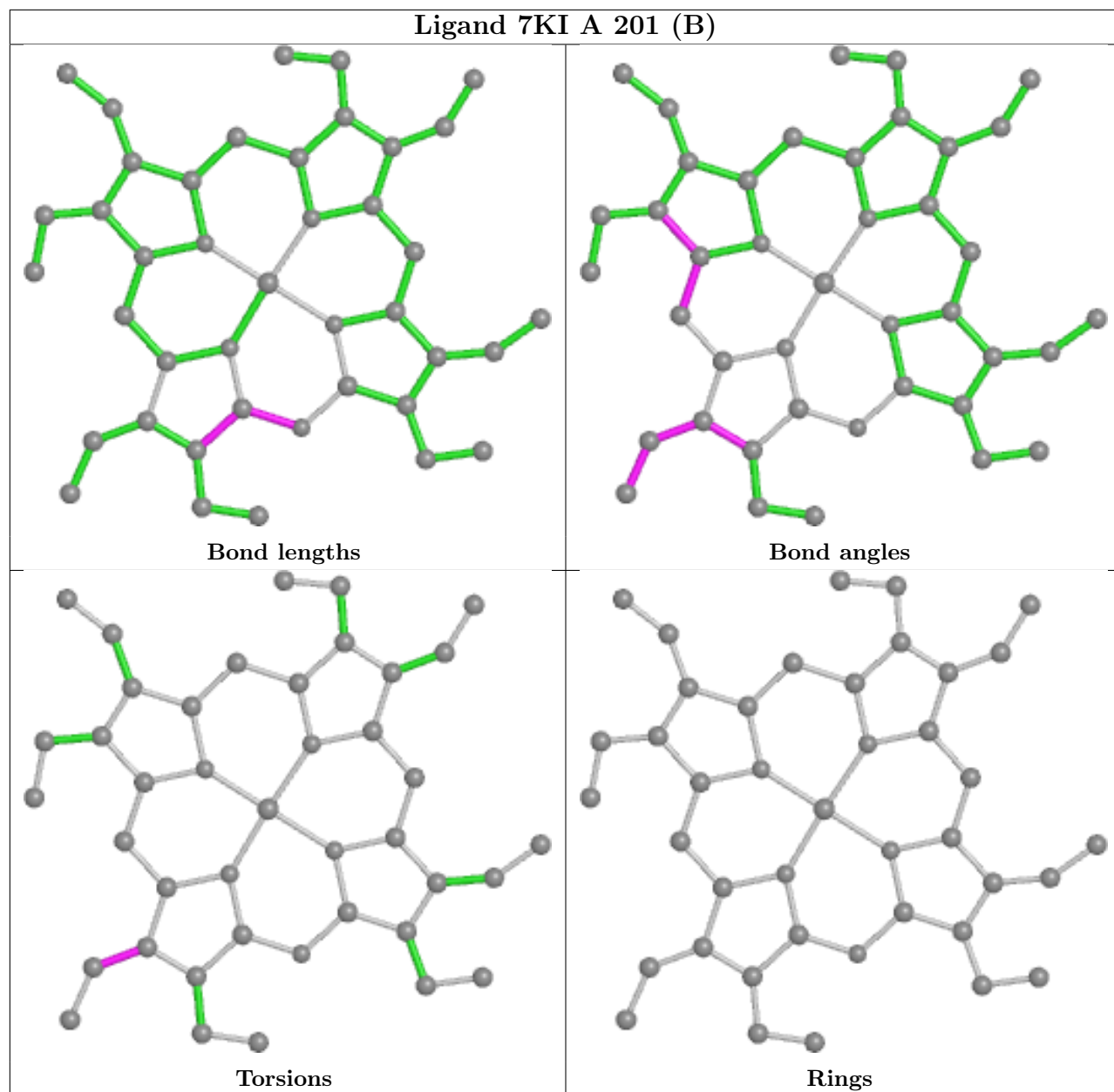
## Ligand 7KI B 201 (B)



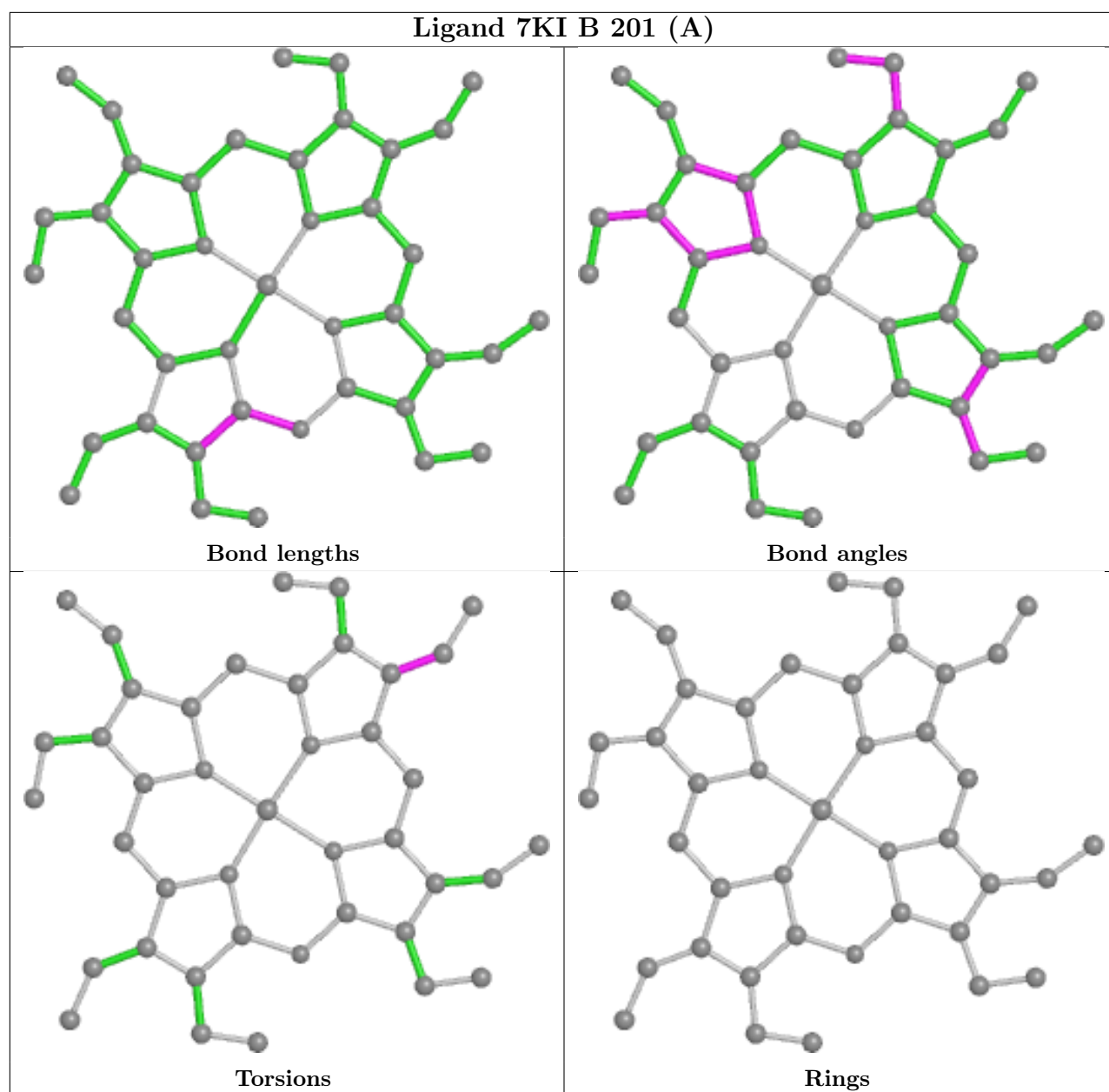
## Ligand 7KI A 201 (A)



## Ligand 7KI A 201 (B)







## 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<sup>th</sup> 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 <sup>2</sup> )	Q<0.9
1	A	183/184 (99%)	0.35	2 (1%) 80 84	10, 14, 22, 54	0
1	B	183/184 (99%)	0.76	28 (15%) 2 2	12, 19, 38, 50	0
All	All	366/368 (99%)	0.56	30 (8%) 11 13	10, 16, 35, 54	0

All (30) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	26	TYR	6.3
1	B	35	GLY	6.2
1	B	38	VAL	6.0
1	B	39	ASP	5.0
1	B	40	GLY	4.6
1	B	62	ALA	4.4
1	B	33	ARG	4.0
1	B	31[A]	ASN	3.6
1	B	64	ASP	3.6
1	B	36[A]	GLN	3.6
1	B	25	ALA	3.4
1	B	1[A]	MET	3.3
1	A	1	MET	3.1
1	B	34	PRO	3.1
1	B	143	GLY	2.9
1	B	41	SER	2.9
1	B	37	VAL	2.9
1	B	138	TYR	2.9
1	B	61	THR	2.8
1	B	142	SER	2.8
1	B	146[A]	SER	2.5
1	B	183	ALA	2.5
1	B	21	ALA	2.4
1	B	14	TRP	2.3

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	RSRZ
1	B	42	ASN	2.3
1	B	27	PHE	2.2
1	B	30	VAL	2.1
1	B	59	LYS	2.0
1	A	183	ALA	2.0
1	B	103	SER	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](#)

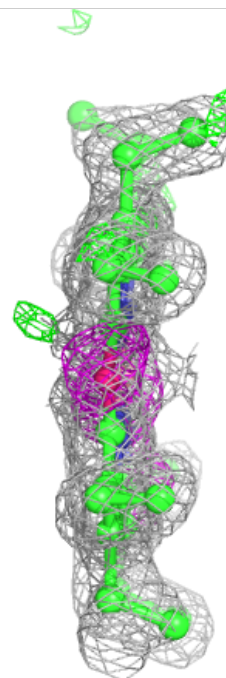
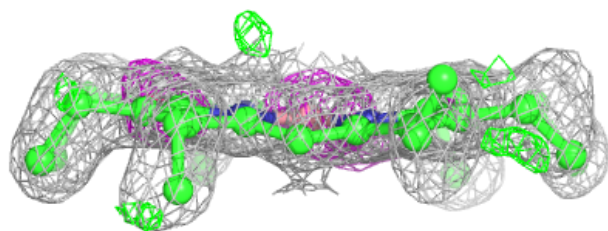
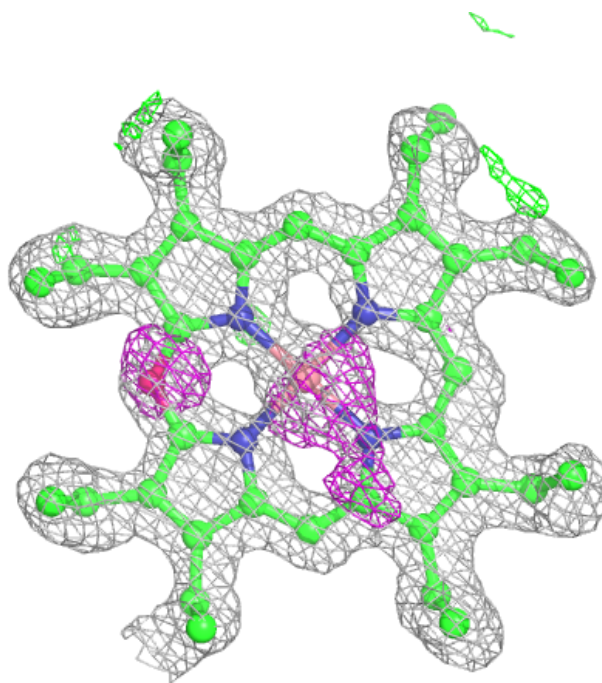
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
4	PEG	A	204	7/7	0.73	0.18	38,41,44,48	0
3	GOL	A	203	6/6	0.74	0.28	35,40,44,45	0
4	PEG	A	205	7/7	0.77	0.18	20,22,26,28	7
5	CIT	B	202	13/13	0.84	0.22	21,32,54,57	13
2	7KI	B	201[A]	41/41	0.94	0.17	16,20,28,31	41
2	7KI	B	201[B]	41/41	0.94	0.17	14,23,27,28	41
3	GOL	A	202	6/6	0.97	0.09	16,16,17,17	0
2	7KI	A	201[B]	41/41	0.98	0.11	10,12,16,19	41
2	7KI	A	201[A]	41/41	0.98	0.11	8,10,12,14	41

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.

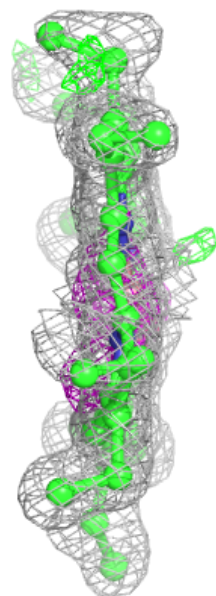
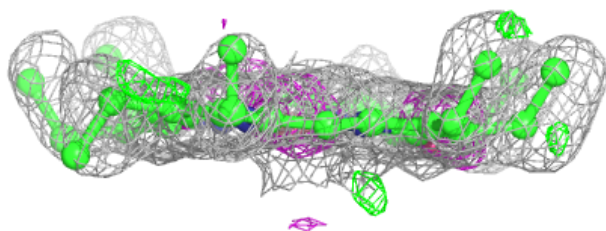
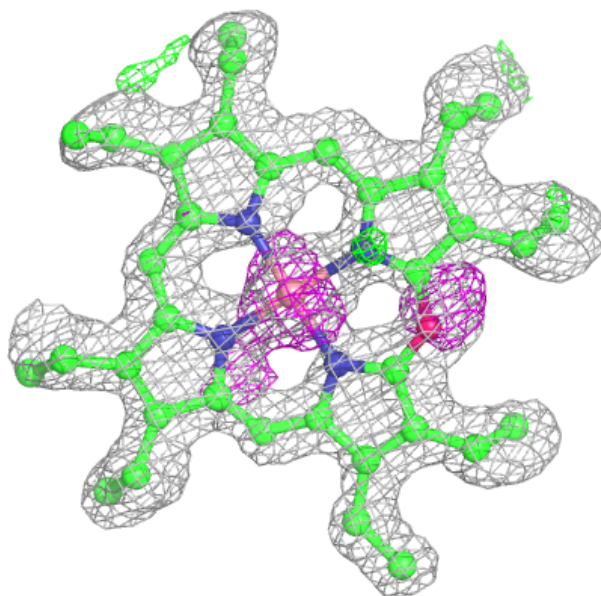
**Electron density around 7KI B 201 (A):**

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



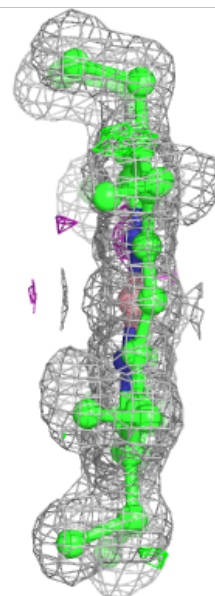
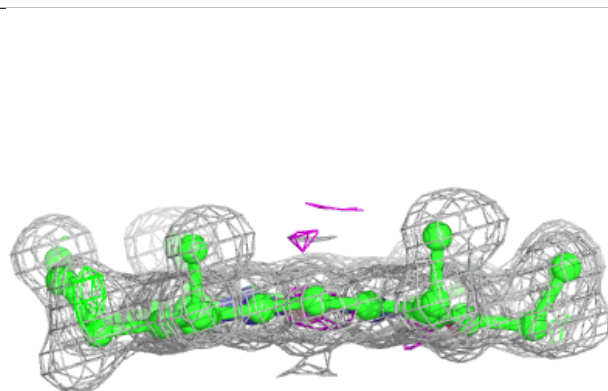
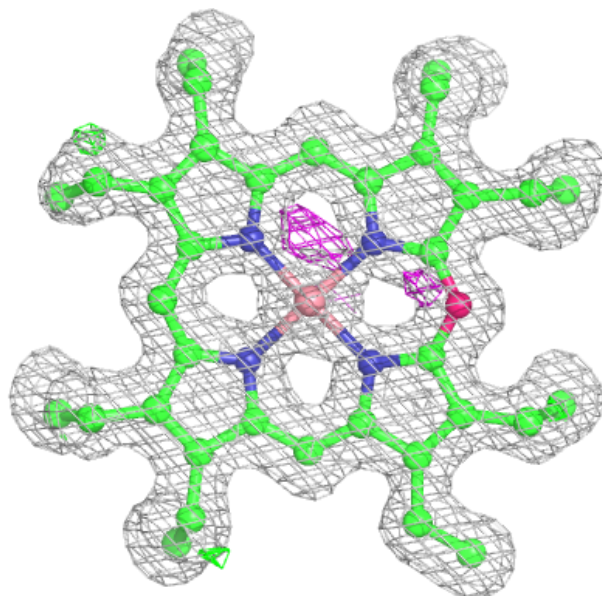
**Electron density around 7KI B 201 (B):**

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



**Electron density around 7KI A 201 (B):**

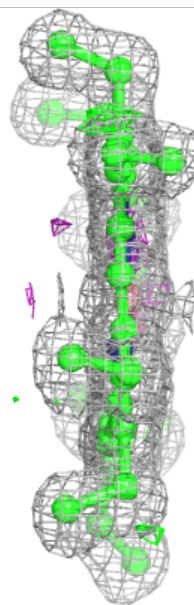
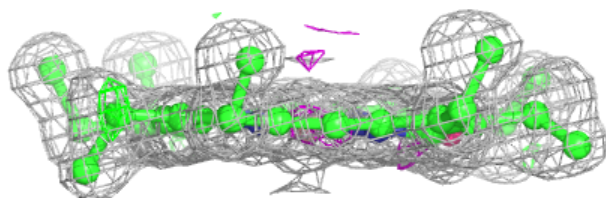
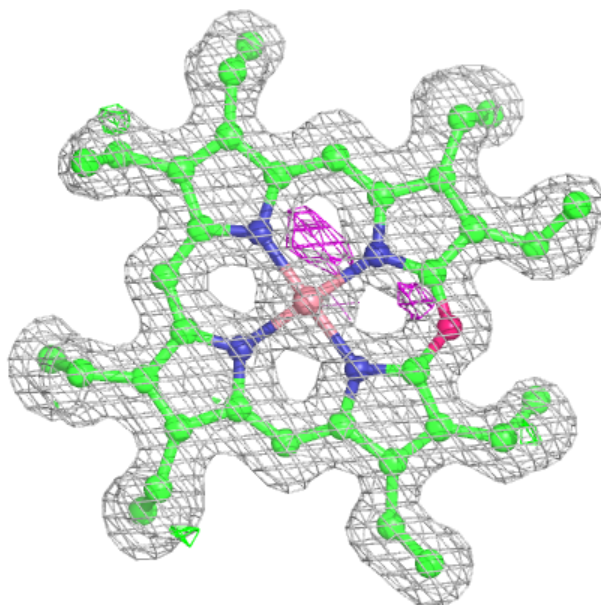
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





**Electron density around 7KI A 201 (A):**

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



## 6.5 Other polymers ⓘ

There are no such residues in this entry.