



# wwPDB X-ray Structure Validation Summary Report ⓘ

Mar 8, 2026 – 05:28 PM UTC

PDB ID : 2W77 / pdb\_00002w77  
Title : Structures of *P. aeruginosa* FpvA bound to heterologous pyoverdines: FpvA-Pvd(Pfl18.1)-Fe complex  
Authors : Greenwald, J.; Nader, M.; Celia, H.; Gruffaz, C.; Meyer, J.-M.; Schalk, I.J.; Pattus, F.  
Deposited on : 2008-12-20  
Resolution : 2.90 Å(reported)

This is a wwPDB X-ray Structure Validation Summary 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 : 4-5-2 with Phenix2.0  
Mogul : 2022.3.0, CSD as543be (2022)  
Xtrriage (Phenix) : 2.0  
EDS : 3.0  
Buster-report : wwPDB partial adaption of 1.1.7 (2018)  
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)  
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) : 2.49

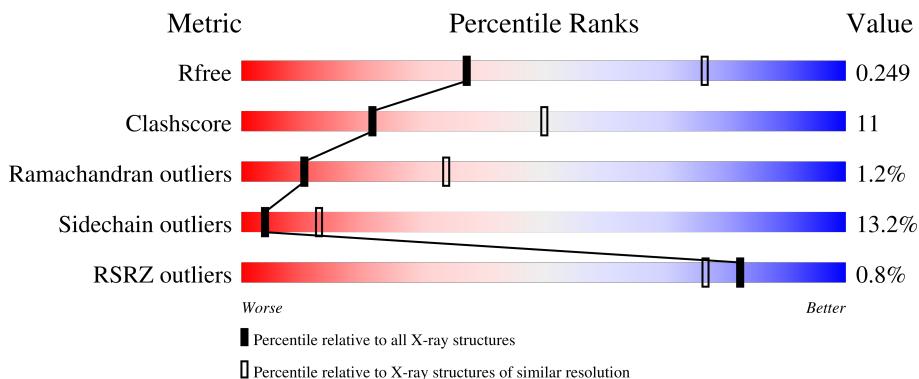
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*




The reported resolution of this entry is 2.90 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))
$R_{free}$	180053	2481 (2.90-2.90)
Clashscore	190562	2690 (2.90-2.90)
Ramachandran outliers	187476	2623 (2.90-2.90)
Sidechain outliers	187428	2625 (2.90-2.90)
RSRZ outliers	180081	2481 (2.90-2.90)

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	772	 69% 24% 6%
1	B	772	 70% 23% 5%
2	C	10	 50% 20% 30%

## 2 Entry composition [i](#)

There are 6 unique types of molecules in this entry. The entry contains 12329 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.

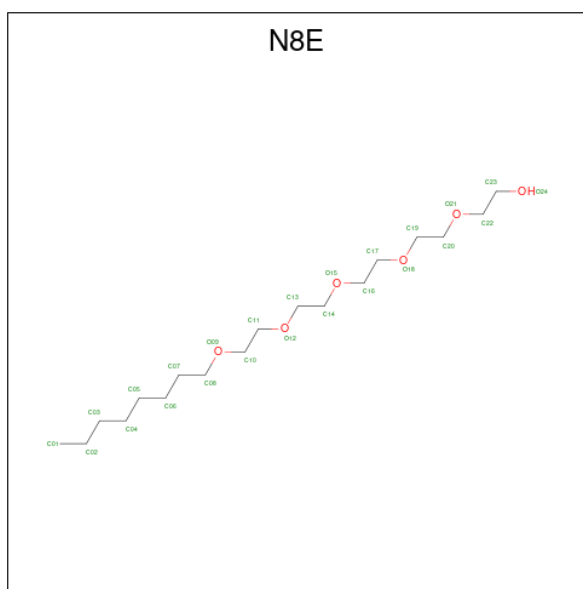
- Molecule 1 is a protein called FERRIPYOVERDINE RECEPTOR.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	772	Total 6114	C 3845	N 1046	O 1211	S 12	0	0	0
1	B	754	Total 5994	C 3775	N 1027	O 1181	S 11	0	0	0

- Molecule 2 is a protein called PYOVERDIN 18-1.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
2	C	10	Total 72	C 40	N 14	O 18	0	0	0

- Molecule 3 is 3,6,9,12,15-PENTAOXATRICOSAN-1-OL (CCD ID: N8E) (formula:  $C_{18}H_{38}O_6$ ).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
			Total	C	O		
3	A	1	Total 24	C 18	O 6	0	0

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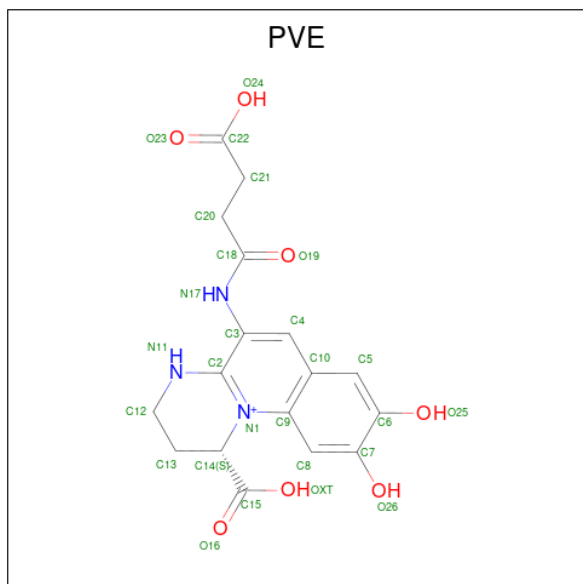
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	C	O	0	1
			48	36	12		

- Molecule 4 is PHOSPHATE ION (CCD ID: PO4) (formula: O<sub>4</sub>P).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total	O	P	0	0
			5	4	1		
4	A	1	Total	O	P	0	0
			5	4	1		
4	A	1	Total	O	P	0	0
			5	4	1		
4	A	1	Total	O	P	0	0
			5	4	1		
4	A	1	Total	O	P	0	0
			5	4	1		
4	B	1	Total	O	P	0	0
			5	4	1		
4	B	1	Total	O	P	0	0
			5	4	1		
4	B	1	Total	O	P	0	0
			5	4	1		
4	B	1	Total	O	P	0	0
			5	4	1		

- Molecule 5 is (1S)-1-CARBOXY-5-[(3-CARBOXYPROPYL)AMINO]-8,9-DIHYDROXY-1,2,3,4-TETRAHYDROPYRIMIDO[1,2-A]QUINOLIN-11-IUM (CCD ID: PVE) (formula: C<sub>17</sub>H<sub>18</sub>N<sub>3</sub>O<sub>7</sub>).

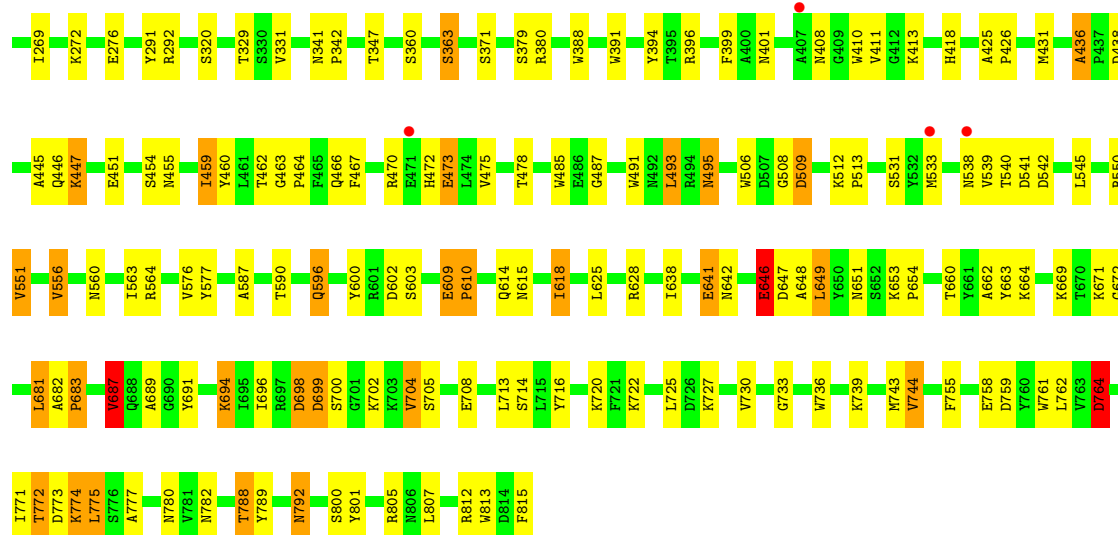


Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
5	C	1	26	17	3	6	5	0

- Molecule 6 is FE (III) ION (CCD ID: FE) (formula: Fe).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Fe		
6	C	1	1	1	0	0





- Molecule 2: PYOVERDIN 18-1

Chain C: 50% 20% 30%



## 4 Data and refinement statistics i

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	194.77Å 130.02Å 141.33Å 90.00° 130.92° 90.00°	Depositor
Resolution (Å)	25.57 – 2.90 25.57 – 2.90	Depositor EDS
% Data completeness (in resolution range)	96.9 (25.57-2.90) 96.8 (25.57-2.90)	Depositor EDS
$R_{merge}$	0.10	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	2.19 (at 2.89Å)	Xtrriage
Refinement program	REFMAC 5.2.0019	Depositor
R, $R_{free}$	0.202 , 0.253 0.202 , 0.249	Depositor DCC
$R_{free}$ test set	2892 reflections (4.97%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	38.8	Xtrriage
Anisotropy	0.013	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.35 , 31.9	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.49$ , $\langle L^2 \rangle = 0.32$	Xtrriage
Estimated twinning fraction	0.013 for h,-k,-h-l	Xtrriage
$F_o, F_c$ correlation	0.90	EDS
Total number of atoms	12329	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	23.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.72% 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: FE, DSN, FHO, FH7, N8E, PO4, PVE

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	1.11	8/6266 (0.1%)	1.25	33/8514 (0.4%)
1	B	1.01	1/6145 (0.0%)	1.17	22/8347 (0.3%)
2	C	0.79	0/34	1.03	0/36
All	All	1.06	9/12445 (0.1%)	1.21	55/16897 (0.3%)

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	A	0	1
1	B	0	1
All	All	0	2

The worst 5 of 9 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	246	VAL	CA-CB	6.68	1.62	1.54
1	A	551	VAL	CA-CB	6.43	1.62	1.54
1	A	699	ASP	CA-C	6.04	1.60	1.52
1	A	504	ILE	CA-CB	6.02	1.61	1.54
1	B	551	VAL	CA-CB	5.64	1.61	1.54

The worst 5 of 55 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	687	VAL	CB-CA-C	-8.94	96.95	110.55
1	A	660	THR	N-CA-C	-7.60	104.03	113.38
1	A	512	LYS	CA-C-N	-7.40	113.20	120.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	512	LYS	C-N-CA	-7.40	113.20	120.52
1	A	152	ILE	N-CA-CB	-7.33	101.29	111.19

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	408	ASN	Peptide
1	B	698	ASP	Peptide

## 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	6114	0	5788	137	0
1	B	5994	0	5675	124	0
2	C	72	0	65	2	0
3	A	72	0	114	8	0
4	A	30	0	0	0	0
4	B	20	0	0	2	0
5	C	26	0	14	0	0
6	C	1	0	0	0	0
All	All	12329	0	11656	260	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 11.

The worst 5 of 260 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:772:THR:HG22	1:B:774:LYS:H	1.07	1.16
1:A:722:LYS:HE2	1:A:723:GLY:H	1.21	1.01
1:A:742:GLN:HG3	1:A:793:ILE:O	1.63	0.97
1:B:446:GLN:HE21	1:B:491:TRP:HB2	1.27	0.97
1:A:772:THR:HG22	1:A:774:LYS:H	1.29	0.96

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	770/772 (100%)	716 (93%)	42 (6%)	12 (2%)	7	27
1	B	750/772 (97%)	702 (94%)	43 (6%)	5 (1%)	18	48
2	C	5/10 (50%)	4 (80%)	0	1 (20%)	0	0
All	All	1525/1554 (98%)	1422 (93%)	85 (6%)	18 (1%)	10	34

5 of 18 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	121	ALA
1	A	124	SER
1	A	603	SER
1	A	646	GLU
1	A	122	ASP

### 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	650/650 (100%)	560 (86%)	90 (14%)	3	12
1	B	637/650 (98%)	558 (88%)	79 (12%)	4	15
2	C	4/4 (100%)	2 (50%)	2 (50%)	0	0
All	All	1291/1304 (99%)	1120 (87%)	171 (13%)	4	13

5 of 171 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	396	ARG
1	B	671	LYS
1	B	459	ILE
1	B	551	VAL
1	B	704	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 38 such sidechains are listed below:

Mol	Chain	Res	Type
1	B	455	ASN
1	B	615	ASN
1	B	466	GLN
1	B	544	ASN
1	B	710	GLN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

4 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
2	FH7	C	11	2,6	9,10,11	5.15	2 (22%)	4,11,13	2.18	2 (50%)
2	FHO	C	6	2,6	9,10,11	5.01	2 (22%)	4,11,13	2.56	1 (25%)

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	FH7	C	11	2,6	-	1/7/10/12	-
2	FHO	C	6	2,6	-	5/7/10/12	-

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	C	11	FH7	OZ-NE	-14.55	1.22	1.39
2	C	6	FHO	OZ-NE	-14.14	1.22	1.39
2	C	11	FH7	CZ-NE	-5.09	1.26	1.34
2	C	6	FHO	CZ-NE	-4.83	1.27	1.34

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	6	FHO	OZ-NE-CD	4.13	123.38	113.81
2	C	11	FH7	OZ-NE-CD	3.24	121.30	113.81
2	C	11	FH7	CG-CD-NE	2.36	115.94	111.12

There are no chirality outliers.

5 of 6 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	C	6	FHO	CG-CD-NE-OZ
2	C	6	FHO	CG-CD-NE-CZ
2	C	11	FH7	O-C-CA-CB
2	C	6	FHO	CA-CB-CG-CD
2	C	6	FHO	C-CA-CB-CG

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	C	6	FHO	1	0

## 5.5 Carbohydrates [\(i\)](#)

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry

Of 15 ligands modelled in this entry, 1 is monoatomic - leaving 14 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	PO4	A	1822	-	4,4,4	0.82	0	6,6,6	0.67	0
4	PO4	B	1818	-	4,4,4	0.83	0	6,6,6	1.09	0
4	PO4	A	1823	-	4,4,4	1.02	0	6,6,6	0.90	0
5	PVE	C	1	2,6	26,28,29	1.97	4 (15%)	30,40,42	1.48	5 (16%)
3	N8E	A	1817[B]	-	23,23,23	0.85	0	22,22,22	0.95	1 (4%)
4	PO4	B	1819	-	4,4,4	0.97	0	6,6,6	0.45	0
4	PO4	A	1820	-	4,4,4	1.17	0	6,6,6	0.50	0
4	PO4	A	1818	-	4,4,4	0.74	0	6,6,6	1.41	1 (16%)
3	N8E	A	1816	-	23,23,23	0.55	0	22,22,22	0.49	0
4	PO4	A	1821	-	4,4,4	0.97	0	6,6,6	0.62	0
4	PO4	B	1817	-	4,4,4	0.73	0	6,6,6	0.83	0
4	PO4	B	1816	-	4,4,4	0.64	0	6,6,6	1.21	1 (16%)
3	N8E	A	1817[A]	-	23,23,23	0.90	0	22,22,22	0.91	0
4	PO4	A	1819	-	4,4,4	0.97	0	6,6,6	1.66	2 (33%)

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	N8E	A	1816	-	-	9/21/21/21	-
3	N8E	A	1817[A]	-	-	10/21/21/21	-
3	N8E	A	1817[B]	-	-	12/21/21/21	-
5	PVE	C	1	2,6	-	8/10/21/23	0/2/3/3

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	C	1	PVE	C20-C18	-6.76	1.37	1.51
5	C	1	PVE	C5-C6	4.52	1.41	1.37
5	C	1	PVE	C8-C7	4.10	1.41	1.37
5	C	1	PVE	C4-C3	2.48	1.42	1.37

The worst 5 of 10 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	C	1	PVE	C21-C20-C18	-3.64	105.17	112.67
5	C	1	PVE	C20-C18-N17	-3.52	108.47	114.59
4	A	1819	PO4	O4-P-O2	3.35	118.34	107.91
5	C	1	PVE	C15-C14-N1	-2.78	107.87	111.53
3	A	1817[B]	N8E	O18-C19-C20	2.73	122.78	110.35

There are no chirality outliers.

5 of 39 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	C	1	PVE	C13-C14-C15-O16
3	A	1817[B]	N8E	O09-C10-C11-O12
3	A	1817[A]	N8E	O15-C16-C17-O18
3	A	1817[A]	N8E	O18-C19-C20-O21
3	A	1817[B]	N8E	O18-C19-C20-O21

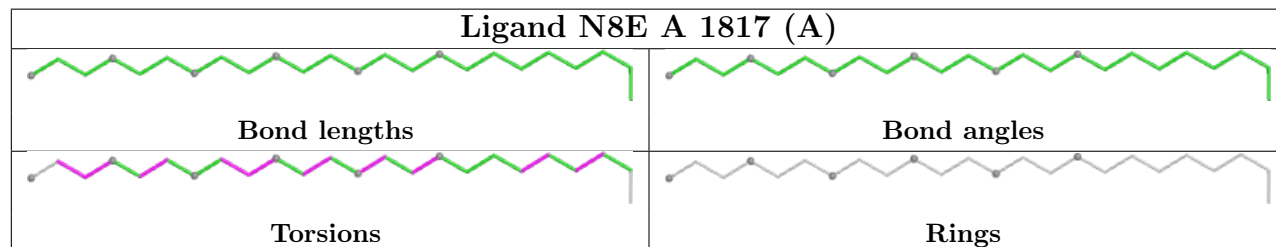
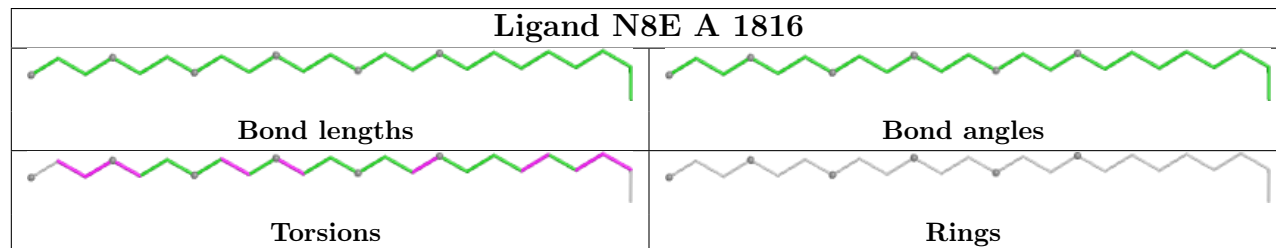
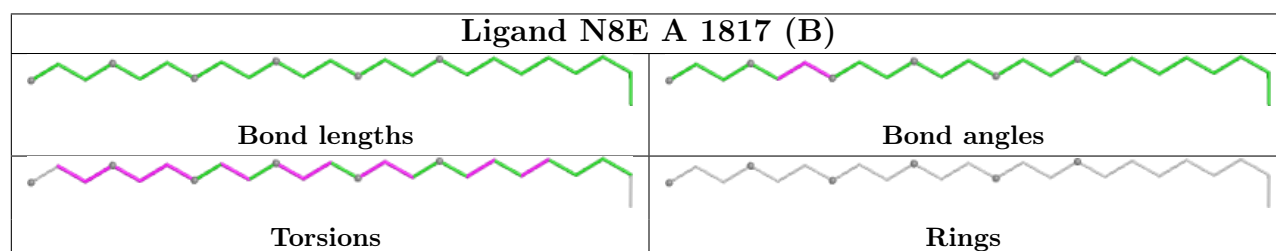
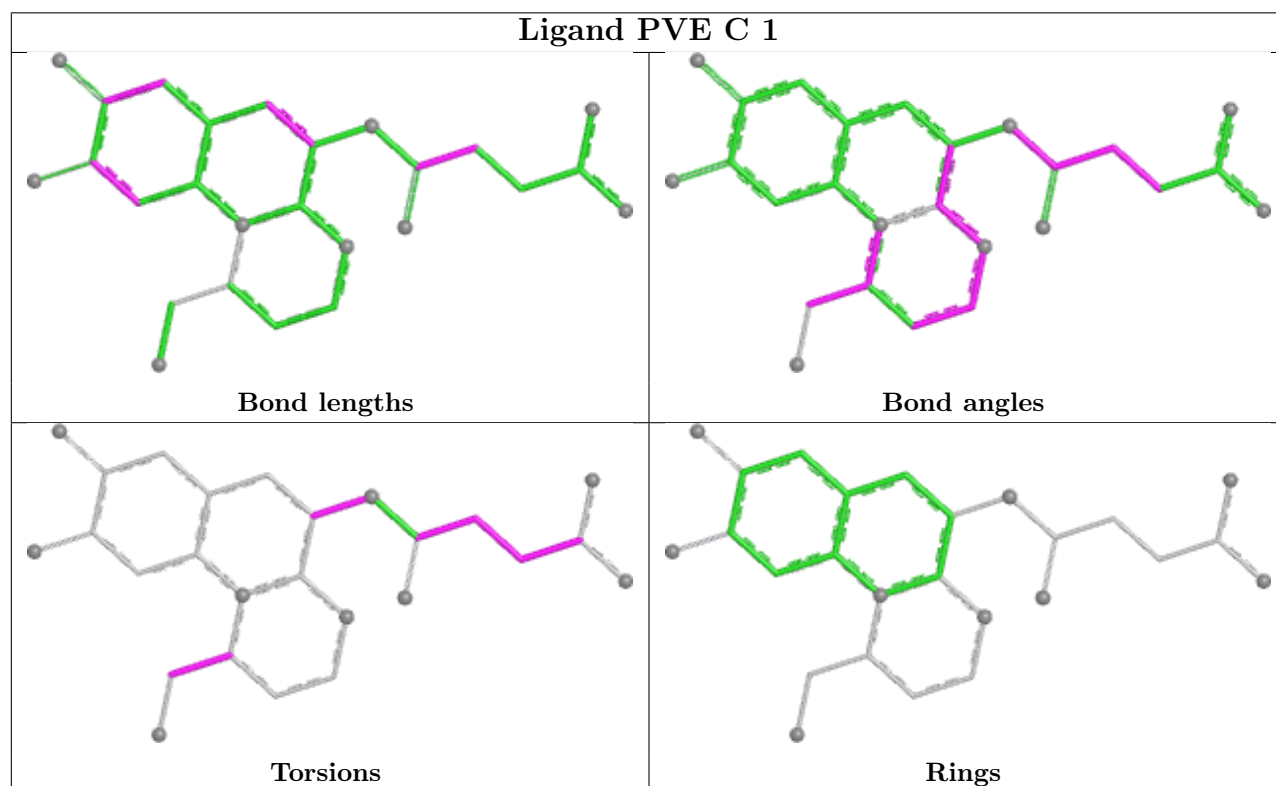
There are no ring outliers.

4 monomers are involved in 10 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	B	1818	PO4	1	0
3	A	1817[B]	N8E	4	0
4	B	1819	PO4	1	0
3	A	1817[A]	N8E	4	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.



## 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, 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	772/772 (100%)	-0.39	6 (0%) 82 77	7, 19, 34, 52	0
1	B	754/772 (97%)	-0.25	7 (0%) 81 75	11, 24, 43, 60	0
2	C	6/10 (60%)	0.56	0 100 100	29, 38, 40, 43	0
All	All	1532/1554 (98%)	-0.32	13 (0%) 82 77	7, 21, 39, 60	0

The worst 5 of 13 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	123	SER	5.1
1	A	44	GLN	4.4
1	B	407	ALA	3.8
1	B	78	ARG	3.5
1	A	699	ASP	3.3

### 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<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(Å <sup>2</sup> )	Q<0.9
2	DSN	C	3	6/7	0.84	0.11	39,40,40,41	0
2	DSN	C	8	6/7	0.88	0.12	40,42,42,42	0
2	FHO	C	6	11/12	0.92	0.10	38,41,43,44	0
2	FH7	C	11	11/12	0.97	0.07	29,29,32,32	0

### 6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

## 6.4 Ligands

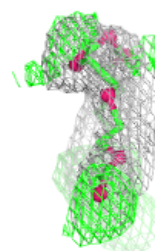
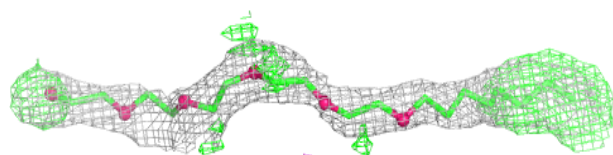
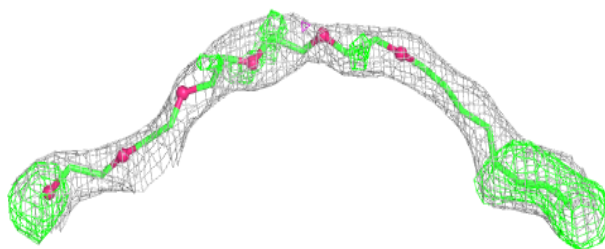
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
3	N8E	A	1817[A]	24/24	0.75	0.26	2,2,7,8	24
3	N8E	A	1817[B]	24/24	0.75	0.26	2,2,4,6	24
5	PVE	C	1	26/27	0.86	0.12	38,40,59,62	5
4	PO4	A	1822	5/5	0.90	0.14	79,79,81,81	0
4	PO4	B	1816	5/5	0.90	0.16	43,43,44,45	0
4	PO4	B	1818	5/5	0.90	0.14	53,54,55,57	0
3	N8E	A	1816	24/24	0.90	0.15	36,48,68,70	0
4	PO4	A	1821	5/5	0.91	0.15	59,60,60,61	0
4	PO4	A	1823	5/5	0.94	0.17	62,62,63,63	0
4	PO4	B	1819	5/5	0.96	0.08	43,44,45,46	0
4	PO4	A	1818	5/5	0.97	0.07	28,31,31,32	0
4	PO4	B	1817	5/5	0.98	0.07	21,22,23,24	0
4	PO4	A	1820	5/5	0.98	0.07	46,48,48,49	0
4	PO4	A	1819	5/5	0.99	0.06	17,20,24,25	0
6	FE	C	2	1/1	1.00	0.03	36,36,36,36	0

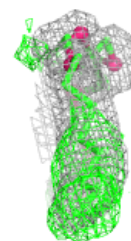
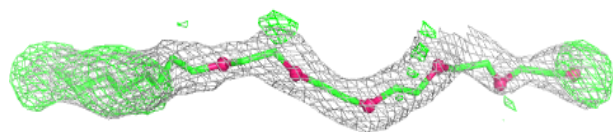
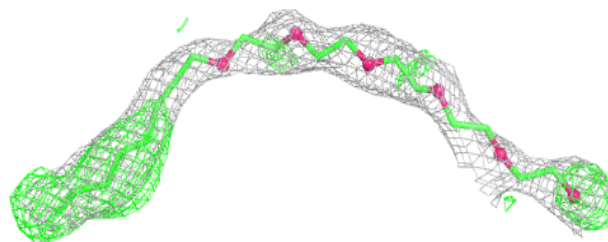
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

**Electron density around N8E A 1817 (A):**

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

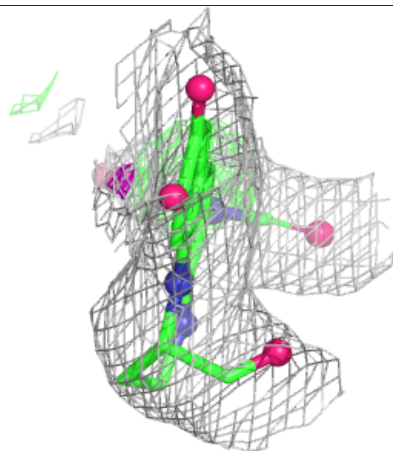
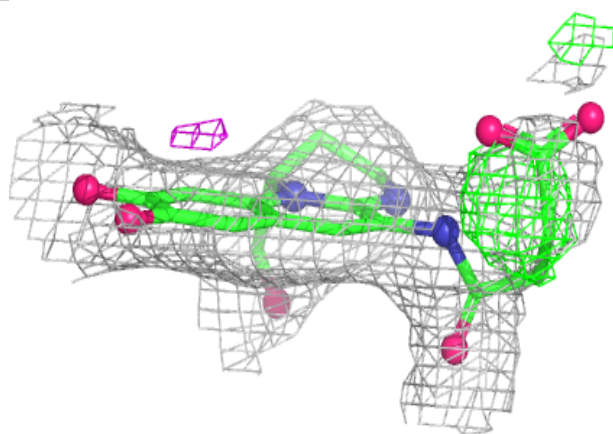
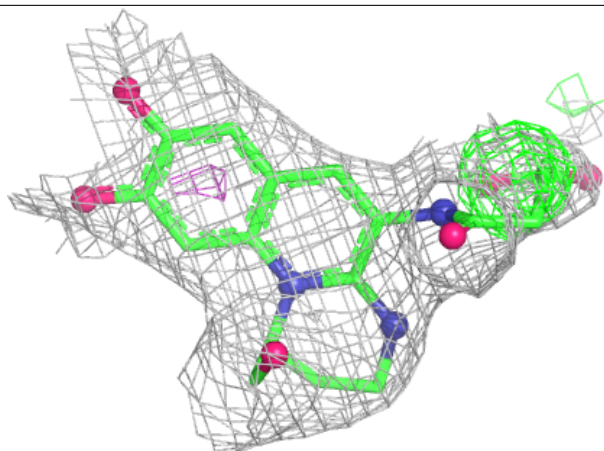
**Electron density around N8E A 1817 (B):**

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

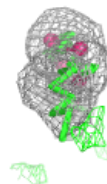
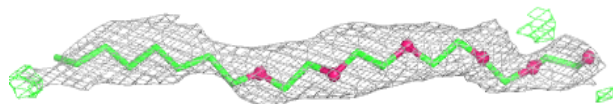
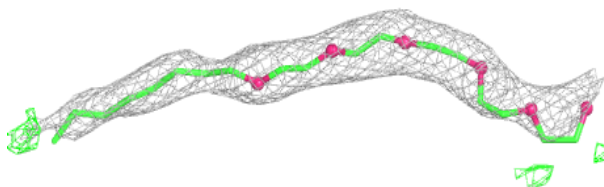


**Electron density around PVE C 1:**

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

**Electron density around N8E A 1816:**

$2mF_o-DF_c$  (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.