



# Full wwPDB X-ray Structure Validation Report ⓘ

Oct 10, 2023 – 04:57 AM EDT

PDB ID : 7TGL  
Title : Crystal structure of AMP+PPi bound DesD, the desferrioxamine synthetase from the Streptomyces griseoflavus ferrimycin biosynthetic pathway  
Authors : Patel, K.D.; Gulick, A.M.  
Deposited on : 2022-01-07  
Resolution : 2.89 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 : 2.35.1  
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) : 2.35.1

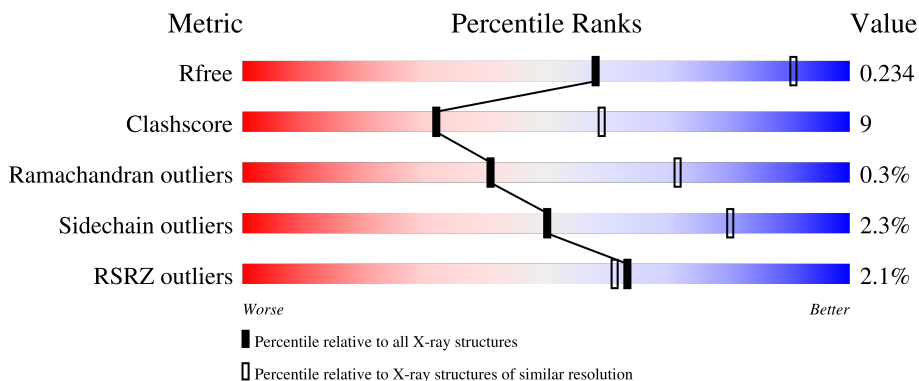
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.89 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	1957 (2.90-2.90)
Clashscore	141614	2172 (2.90-2.90)
Ramachandran outliers	138981	2115 (2.90-2.90)
Sidechain outliers	138945	2117 (2.90-2.90)
RSRZ outliers	127900	1906 (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	612	 77% 18%
1	B	612	 79% 17%
1	C	612	 76% 20%
1	D	612	 80% 16%
1	E	612	 67% 29%

## 2 Entry composition [i](#)

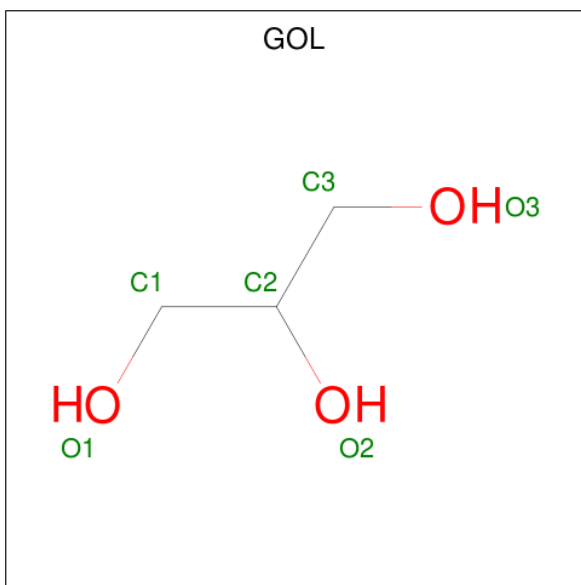
There are 7 unique types of molecules in this entry. The entry contains 23630 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Desferrioxamine synthetase DesD.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	590	Total 4675	C 2973	N 814	O 873	S 15	0	0	0
1	B	592	Total 4670	C 2970	N 815	O 870	S 15	0	0	0
1	C	591	Total 4658	C 2964	N 811	O 868	S 15	0	0	0
1	D	591	Total 4660	C 2966	N 811	O 868	S 15	0	0	0
1	E	591	Total 4668	C 2970	N 813	O 870	S 15	0	0	0

- Molecule 2 is GLYCEROL (three-letter code: GOL) (formula:  $C_3H_8O_3$ ).



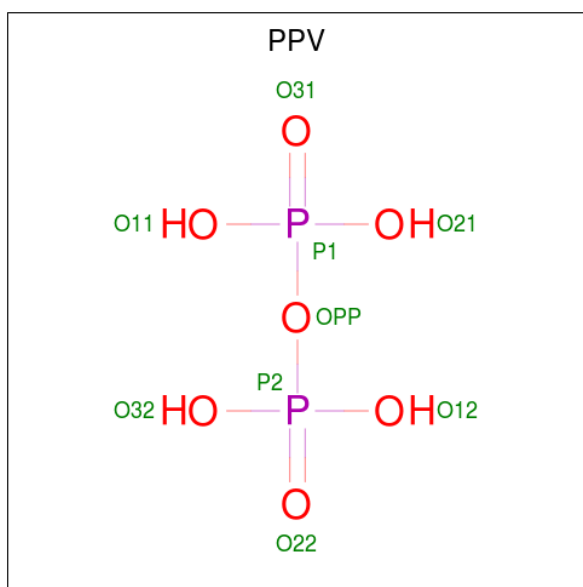
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
			Total	C	O		
2	A	1	Total 6	C 3	O 3	0	0

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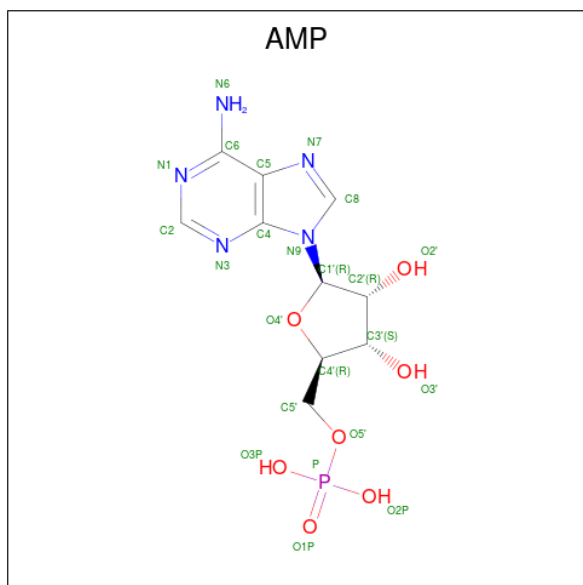
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total 6	C 3	O 3	0	0
2	B	1	Total 6	C 3	O 3	0	0
2	B	1	Total 6	C 3	O 3	0	0
2	B	1	Total 6	C 3	O 3	0	0
2	B	1	Total 6	C 3	O 3	0	0
2	B	1	Total 6	C 3	O 3	0	0
2	C	1	Total 6	C 3	O 3	0	0
2	C	1	Total 6	C 3	O 3	0	0
2	D	1	Total 6	C 3	O 3	0	0
2	D	1	Total 6	C 3	O 3	0	0
2	E	1	Total 6	C 3	O 3	0	0
2	E	1	Total 6	C 3	O 3	0	0
2	E	1	Total 6	C 3	O 3	0	0

- Molecule 3 is PYROPHOSPHATE (three-letter code: PPV) (formula:  $H_4O_7P_2$ ) (labeled as "Ligand of Interest" by depositor).



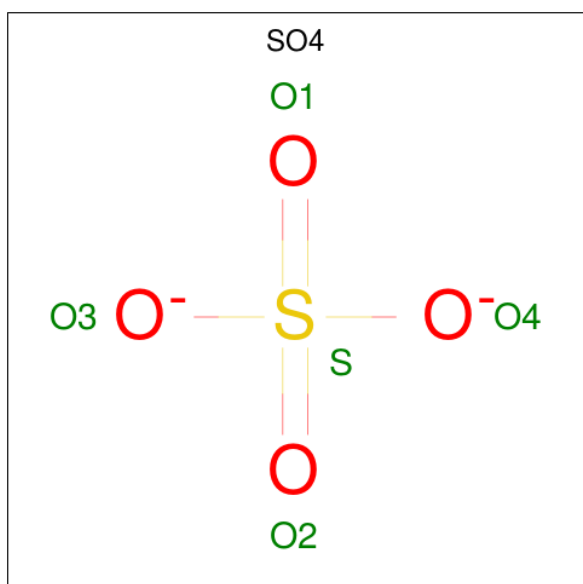
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	O	P	0	0
			9	7	2		
3	B	1	Total	O	P	0	0
			9	7	2		
3	C	1	Total	O	P	0	0
			9	7	2		
3	D	1	Total	O	P	0	0
			9	7	2		
3	E	1	Total	O	P	0	0
			9	7	2		

- Molecule 4 is ADENOSINE MONOPHOSPHATE (three-letter code: AMP) (formula: C<sub>10</sub>H<sub>14</sub>N<sub>5</sub>O<sub>7</sub>P) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	N	O	P		
4	A	1	Total	C	N	O	P	0	0
			23	10	5	7	1		
4	B	1	Total	C	N	O	P	0	0
			23	10	5	7	1		
4	C	1	Total	C	N	O	P	0	0
			23	10	5	7	1		
4	D	1	Total	C	N	O	P	0	0
			23	10	5	7	1		
4	E	1	Total	C	N	O	P	0	0
			23	10	5	7	1		

- Molecule 5 is SULFATE ION (three-letter code: SO4) (formula: O<sub>4</sub>S).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	1	Total O S 5 4 1	0	0
5	B	1	Total O S 5 4 1	0	0
5	B	1	Total O S 5 4 1	0	0
5	B	1	Total O S 5 4 1	0	0
5	D	1	Total O S 5 4 1	0	0
5	D	1	Total O S 5 4 1	0	0
5	D	1	Total O S 5 4 1	0	0
5	E	1	Total O S 5 4 1	0	0

- Molecule 6 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	2	Total Mg 2 2	0	0
6	B	2	Total Mg 2 2	0	0
6	C	2	Total Mg 2 2	0	0
6	D	2	Total Mg 2 2	0	0
6	E	2	Total Mg 2 2	0	0

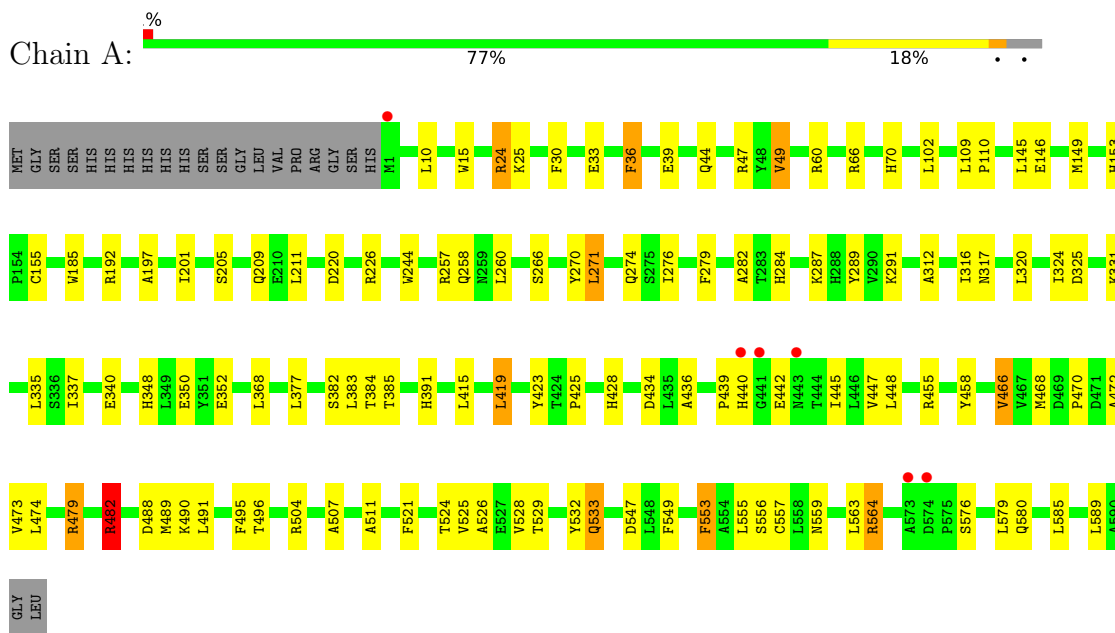
- Molecule 7 is water.

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

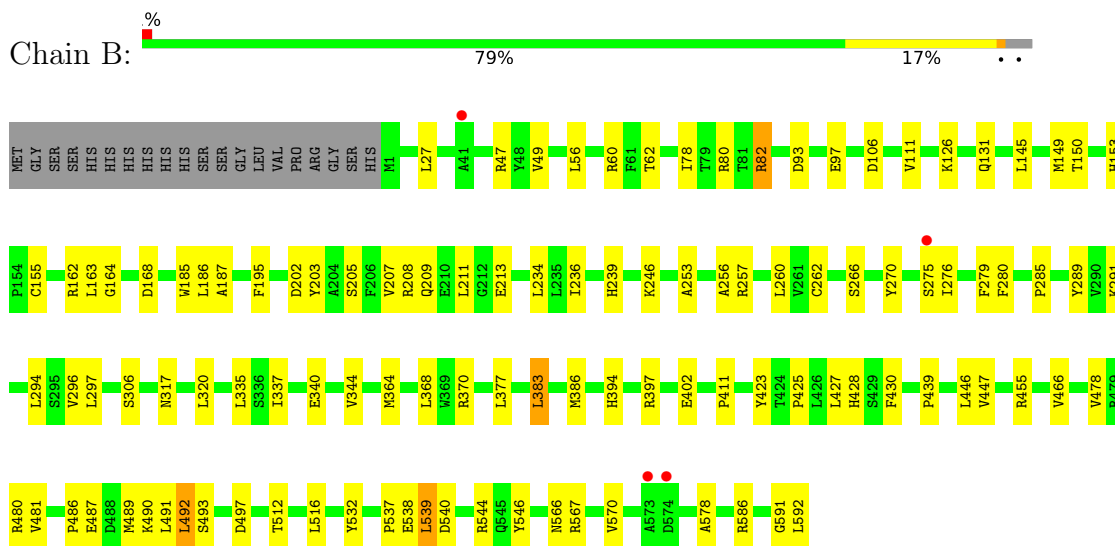
### 3 Residue-property plots i

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: Desferrioxamine synthetase DesD



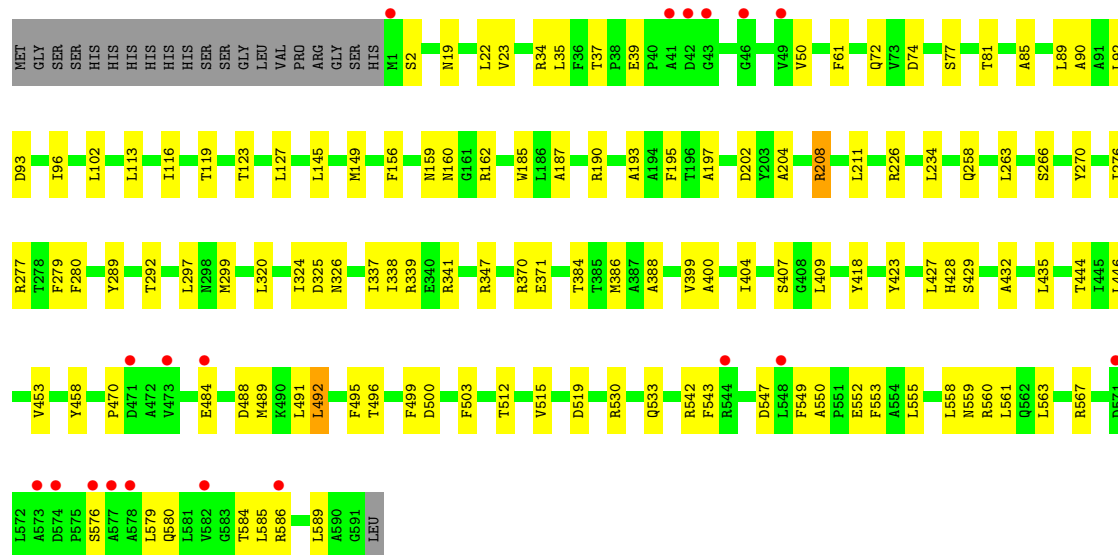
- Molecule 1: Desferrioxamine synthetase DesD



- Molecule 1: Desferrioxamine synthetase DesD

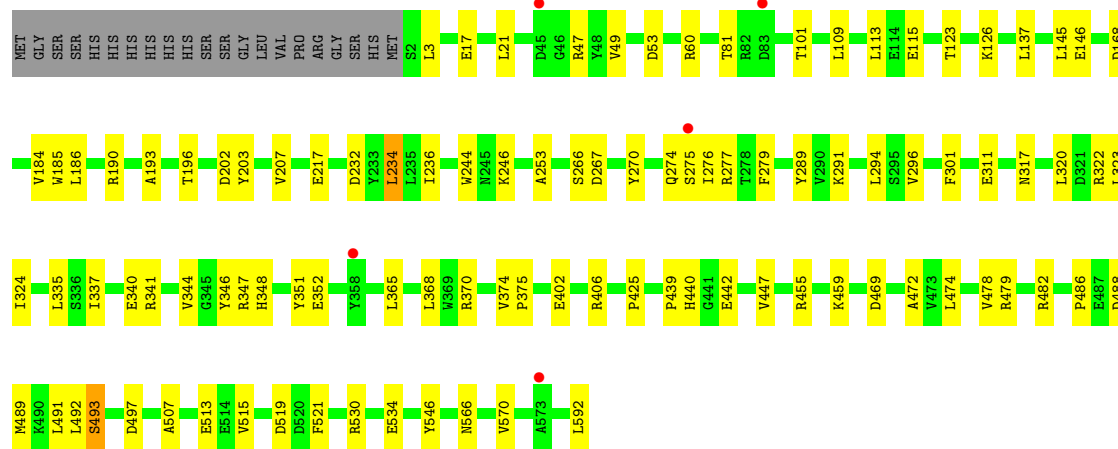


Chain C: 3% 76% 20%



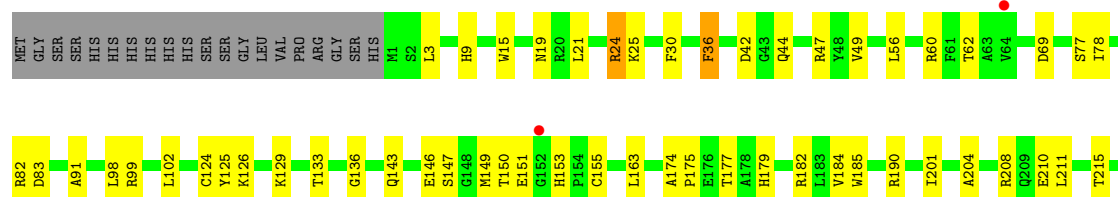
• Molecule 1: Desferrioxamine synthetase DesD

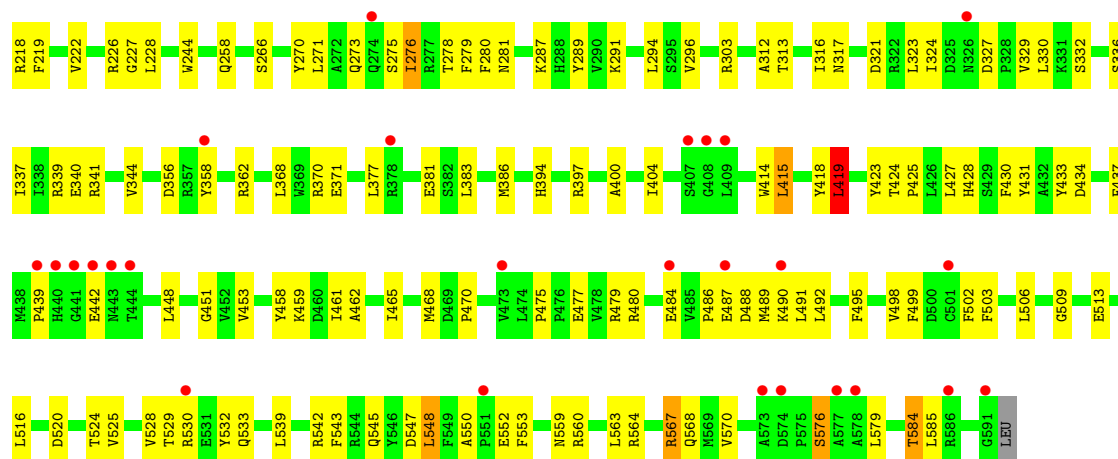
Chain D: 80% 16%



• Molecule 1: Desferrioxamine synthetase DesD

Chain E: 5% 67% 29%





## 4 Data and refinement statistics

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	126.50Å 236.75Å 330.81Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	39.46 – 2.89 39.46 – 2.89	Depositor EDS
% Data completeness (in resolution range)	99.3 (39.46-2.89) 92.7 (39.46-2.89)	Depositor EDS
$R_{merge}$	0.13	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	0.96 (at 2.90Å)	Xtrriage
Refinement program	PHENIX 1.19.2_4158	Depositor
R, $R_{free}$	0.189 , 0.235 0.187 , 0.234	Depositor DCC
$R_{free}$ test set	1988 reflections (1.81%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	73.0	Xtrriage
Anisotropy	0.368	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.33 , 48.4	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.49$ , $\langle L^2 \rangle = 0.32$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.95	EDS
Total number of atoms	23630	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	85.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.48% 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: GOL, MG, SO4, PPV, AMP

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	0.51	0/4789	0.73	6/6521 (0.1%)
1	B	0.52	0/4783	0.71	0/6512
1	C	0.45	0/4772	0.67	1/6499 (0.0%)
1	D	0.47	0/4774	0.67	0/6501
1	E	0.42	0/4782	0.67	3/6512 (0.0%)
All	All	0.47	0/23900	0.69	10/32545 (0.0%)

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

There are no bond length outliers.

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	479	ARG	NE-CZ-NH2	-7.31	116.65	120.30
1	A	482	ARG	CB-CG-CD	-6.18	95.53	111.60
1	C	492	LEU	CA-CB-CG	6.14	129.43	115.30
1	A	533	GLN	CA-CB-CG	5.89	126.35	113.40
1	A	482	ARG	CA-CB-CG	5.68	125.90	113.40
1	E	419	LEU	CB-CG-CD1	-5.36	101.89	111.00
1	E	149	MET	CG-SD-CE	-5.13	91.99	100.20
1	A	220	ASP	CB-CG-OD1	5.08	122.88	118.30
1	E	415	LEU	CA-CB-CG	5.07	126.96	115.30
1	A	289	TYR	CA-CB-CG	5.03	122.97	113.40

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	482	ARG	Sidechain

## 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	4675	0	4554	83	0
1	B	4670	0	4549	68	1
1	C	4658	0	4522	80	0
1	D	4660	0	4529	65	0
1	E	4668	0	4543	128	1
2	A	12	0	16	0	0
2	B	30	0	40	0	0
2	C	12	0	16	0	0
2	D	12	0	16	3	0
2	E	18	0	24	3	0
3	A	9	0	0	1	0
3	B	9	0	0	0	0
3	C	9	0	0	1	0
3	D	9	0	0	0	0
3	E	9	0	0	2	0
4	A	23	0	12	1	0
4	B	23	0	12	0	0
4	C	23	0	12	0	0
4	D	23	0	12	0	0
4	E	23	0	12	0	0
5	A	5	0	0	0	0
5	B	15	0	0	1	0
5	D	15	0	0	0	0
5	E	5	0	0	0	0
6	A	2	0	0	0	0
6	B	2	0	0	0	0
6	C	2	0	0	0	0
6	D	2	0	0	0	0
6	E	2	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
7	A	1	0	0	0	0
7	C	1	0	0	0	0
7	D	3	0	0	0	0
All	All	23630	0	22869	414	1

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 9.

All (414) 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:C:226:ARG:HE	1:C:258:GLN:HE21	1.05	0.93
1:A:470:PRO:O	1:A:482:ARG:NH1	2.08	0.88
1:C:429:SER:HB3	1:C:435:LEU:HD23	1.54	0.86
1:D:185:TRP:HE1	1:D:266:SER:HB3	1.41	0.86
1:E:185:TRP:HE1	1:E:266:SER:HB3	1.43	0.84
1:E:418:TYR:HB2	1:E:453:VAL:HG21	1.61	0.82
1:B:538:GLU:HG2	1:B:539:LEU:HD13	1.61	0.80
1:E:564:ARG:HH21	2:E:603:GOL:H31	1.44	0.80
1:A:474:LEU:HD12	1:A:479:ARG:HD2	1.65	0.78
1:D:17:GLU:HG3	1:D:21:LEU:HD11	1.66	0.78
1:E:442:GLU:O	1:E:459:LYS:NZ	2.16	0.77
1:A:496:THR:HG21	1:A:556:SER:HB3	1.67	0.77
1:A:472:ALA:O	1:A:479:ARG:NH2	2.20	0.75
1:E:539:LEU:HB2	1:E:543:PHE:CE1	2.22	0.75
1:C:491:LEU:HD23	1:C:495:PHE:CE2	2.21	0.75
1:C:555:LEU:HD13	1:C:585:LEU:HD11	1.71	0.71
1:E:487:GLU:OE2	1:E:545:GLN:NE2	2.23	0.71
1:E:434:ASP:OD1	1:E:542:ARG:NH2	2.25	0.70
1:C:552:GLU:HB3	1:C:584:THR:CG2	2.21	0.69
1:E:133:THR:HG23	1:E:136:GLY:H	1.57	0.69
1:E:419:LEU:HD13	1:E:528:VAL:HG11	1.73	0.69
1:B:236:ILE:HG12	1:B:344:VAL:HG21	1.75	0.69
1:E:539:LEU:HB2	1:E:543:PHE:HE1	1.57	0.69
1:C:159:ASN:HB2	1:C:299:MET:HE2	1.75	0.69
1:C:489:MET:HG2	1:C:492:LEU:HD11	1.75	0.69
1:D:276:ILE:HD12	1:D:276:ILE:H	1.58	0.68
1:B:570:VAL:HG12	1:B:578:ALA:HB3	1.76	0.67
1:A:473:VAL:HA	1:A:479:ARG:HH12	1.59	0.66
1:E:430:PHE:HE2	1:E:491:LEU:HD13	1.58	0.66
1:A:489:MET:HE1	1:A:576:SER:HB3	1.76	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:143:GLN:HE21	1:E:271:LEU:HD23	1.60	0.66
1:A:488:ASP:N	1:A:488:ASP:OD1	2.29	0.66
1:C:19:ASN:O	1:C:23:VAL:HG23	1.96	0.65
1:C:119:THR:HG23	1:C:160:ASN:HB2	1.78	0.65
1:A:10:LEU:HB3	1:B:256:ALA:HB2	1.79	0.65
1:A:337:ILE:HG22	1:A:458:TYR:HB2	1.79	0.65
1:A:325:ASP:HA	1:A:331:LYS:HE3	1.80	0.64
1:B:317:ASN:ND2	1:B:340:GLU:HB2	2.12	0.64
1:A:468:MET:O	1:A:490:LYS:NZ	2.31	0.64
1:A:419:LEU:HB3	1:A:423:TYR:HB3	1.80	0.64
1:D:474:LEU:HD13	1:D:478:VAL:HG12	1.79	0.64
1:D:493:SER:O	1:D:497:ASP:HB2	1.98	0.63
1:B:208:ARG:HG3	1:B:208:ARG:HH11	1.62	0.63
1:C:547:ASP:OD1	1:C:550:ALA:N	2.30	0.63
1:A:415:LEU:O	1:A:419:LEU:HD12	1.99	0.63
1:A:70:HIS:HD2	1:A:504:ARG:HG2	1.63	0.63
1:A:470:PRO:HA	1:A:482:ARG:HD2	1.79	0.63
1:E:430:PHE:CE2	1:E:491:LEU:HD13	2.33	0.63
1:B:377:LEU:HD11	1:B:383:LEU:HD22	1.81	0.63
1:E:146:GLU:HG2	1:E:273:GLN:OE1	1.99	0.63
1:D:479:ARG:HB3	1:D:482:ARG:HH21	1.65	0.62
1:C:561:LEU:HD21	1:C:579:LEU:HA	1.81	0.62
1:D:301:PHE:HZ	1:D:570:VAL:HG22	1.65	0.61
1:C:491:LEU:HD23	1:C:495:PHE:CZ	2.36	0.61
1:D:335:LEU:HD22	1:D:425:PRO:HB3	1.82	0.61
1:E:427:LEU:H	1:E:427:LEU:HD12	1.65	0.61
1:B:80:ARG:NH2	1:B:97:GLU:OE2	2.34	0.61
1:E:24:ARG:HB3	1:E:78:ILE:HD11	1.83	0.60
1:C:187:ALA:HB2	1:C:263:LEU:HD11	1.82	0.60
1:E:337:ILE:HG22	1:E:458:TYR:HB2	1.83	0.60
1:B:289:TYR:HB2	1:B:370:ARG:HB3	1.83	0.60
1:C:22:LEU:HD21	1:C:116:ILE:HD12	1.83	0.60
1:E:129:LYS:NZ	1:E:147:SER:O	2.35	0.60
1:D:3:LEU:HD21	1:E:184:VAL:HG22	1.84	0.59
1:A:320:LEU:O	1:A:324:ILE:HG13	2.03	0.59
1:D:17:GLU:O	1:D:21:LEU:HD12	2.03	0.59
1:E:185:TRP:NE1	1:E:266:SER:HB3	2.16	0.59
1:A:153:HIS:CE1	1:A:155:CYS:HB2	2.37	0.59
1:A:559:ASN:O	1:A:563:LEU:HD12	2.02	0.59
1:E:226:ARG:HE	1:E:258:GLN:HE21	1.49	0.59
1:E:564:ARG:NH2	2:E:603:GOL:H31	2.18	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:525:VAL:O	1:A:529:THR:OG1	2.18	0.58
1:D:236:ILE:HG12	1:D:344:VAL:HG21	1.85	0.58
1:E:525:VAL:O	1:E:529:THR:HG23	2.02	0.58
1:B:208:ARG:HD3	1:B:213:GLU:HG2	1.85	0.58
1:D:469:ASP:HB3	1:D:472:ALA:HB2	1.86	0.58
1:A:205:SER:O	1:A:209:GLN:HG3	2.03	0.58
1:C:226:ARG:NE	1:C:258:GLN:HE21	1.90	0.58
1:C:337:ILE:HG22	1:C:458:TYR:HB2	1.85	0.57
1:A:149:MET:HE1	1:A:391:HIS:HB2	1.86	0.57
1:C:226:ARG:HE	1:C:258:GLN:NE2	1.88	0.57
1:D:491:LEU:HD22	1:D:546:TYR:HB3	1.86	0.57
1:E:400:ALA:O	1:E:404:ILE:HG13	2.04	0.57
1:C:552:GLU:HB3	1:C:584:THR:HG21	1.86	0.57
1:E:210:GLU:HA	1:E:287:LYS:HE2	1.85	0.57
1:B:537:PRO:HA	1:B:540:ASP:OD1	2.05	0.57
1:C:92:LEU:O	1:C:96:ILE:HG13	2.05	0.57
1:A:70:HIS:HD2	1:A:504:ARG:CG	2.17	0.57
1:C:326:ASN:HD21	1:E:190:ARG:NH1	2.02	0.57
1:E:468:MET:O	1:E:490:LYS:NZ	2.38	0.57
1:E:533:GLN:HA	1:E:543:PHE:HE2	1.70	0.57
1:B:185:TRP:HE1	1:B:266:SER:HB3	1.70	0.56
1:E:280:PHE:HB2	1:E:289:TYR:HE1	1.69	0.56
1:A:49:VAL:HG23	1:A:60:ARG:HG2	1.88	0.56
1:D:246:LYS:HD2	2:D:601:GOL:H12	1.87	0.56
1:C:297:LEU:HD22	1:C:567:ARG:NH1	2.21	0.56
1:E:475:PRO:O	1:E:479:ARG:HG3	2.05	0.56
1:A:153:HIS:HE1	1:A:155:CYS:HB2	1.70	0.56
1:C:400:ALA:O	1:C:404:ILE:HG13	2.06	0.56
1:E:278:THR:OG1	3:E:604:PPV:O22	2.20	0.56
1:A:102:LEU:HB3	1:A:563:LEU:CD2	2.35	0.55
1:D:146:GLU:OE1	1:D:274:GLN:HG3	2.06	0.55
1:B:489:MET:HA	1:B:492:LEU:HD23	1.89	0.55
1:C:547:ASP:OD1	1:C:549:PHE:N	2.40	0.55
1:E:291:LYS:NZ	3:E:604:PPV:OPP	2.36	0.55
1:E:386:MET:HE2	1:E:502:PHE:CE2	2.41	0.55
1:C:423:TYR:CE1	1:C:427:LEU:HD21	2.42	0.55
1:C:576:SER:HA	1:C:579:LEU:HD11	1.87	0.55
1:C:185:TRP:CE2	1:C:211:LEU:HD21	2.43	0.54
1:B:203:TYR:O	1:B:207:VAL:HG22	2.06	0.54
1:E:489:MET:HE1	1:E:576:SER:HB2	1.89	0.54
1:D:196:THR:HG21	1:D:311:GLU:O	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:552:GLU:HB3	1:E:584:THR:OG1	2.07	0.54
1:E:339:ARG:HH21	1:E:341:ARG:CZ	2.20	0.54
1:A:576:SER:HA	1:A:579:LEU:HD23	1.90	0.54
1:E:470:PRO:HG3	1:E:484:GLU:HG2	1.90	0.54
1:C:270:TYR:HB3	1:C:279:PHE:HB3	1.89	0.53
1:D:479:ARG:HB3	1:D:482:ARG:NH2	2.23	0.53
1:B:487:GLU:OE2	1:B:546:TYR:OH	2.22	0.53
1:D:347:ARG:HD2	1:D:352:GLU:OE2	2.09	0.53
1:A:70:HIS:CD2	1:A:504:ARG:HG2	2.44	0.53
1:A:383:LEU:HD12	1:A:445:ILE:CG2	2.38	0.53
1:D:275:SER:O	1:D:277:ARG:N	2.40	0.53
1:C:388:ALA:O	1:C:399:VAL:HB	2.08	0.53
1:E:424:THR:HA	1:E:427:LEU:CD1	2.39	0.53
1:C:297:LEU:HD22	1:C:567:ARG:HH12	1.73	0.53
1:E:477:GLU:HA	1:E:480:ARG:HH21	1.73	0.53
1:E:542:ARG:HA	1:E:545:GLN:HB3	1.91	0.53
1:A:145:LEU:HD13	1:A:384:THR:HB	1.91	0.52
1:A:472:ALA:O	1:A:479:ARG:CZ	2.57	0.52
1:B:145:LEU:O	1:B:149:MET:HG2	2.09	0.52
1:A:317:ASN:ND2	1:A:340:GLU:HB2	2.24	0.52
1:A:377:LEU:HD11	1:A:383:LEU:HD23	1.91	0.52
1:E:270:TYR:HB3	1:E:279:PHE:HB3	1.91	0.52
1:A:428:HIS:HA	1:A:532:TYR:OH	2.09	0.52
1:A:270:TYR:HB3	1:A:279:PHE:HB3	1.92	0.52
1:D:440:HIS:CE1	1:D:442:GLU:HB3	2.45	0.52
1:B:567:ARG:HG2	1:B:567:ARG:HH11	1.73	0.52
1:D:137:LEU:HB3	1:D:145:LEU:CD2	2.40	0.52
1:D:185:TRP:NE1	1:D:266:SER:HB3	2.18	0.52
1:A:149:MET:CE	1:A:391:HIS:HB2	2.40	0.52
1:C:320:LEU:HD23	1:C:337:ILE:HD13	1.92	0.52
1:D:447:VAL:HG21	1:D:455:ARG:CZ	2.40	0.52
1:E:415:LEU:HD22	1:E:419:LEU:HD11	1.92	0.51
1:E:547:ASP:OD1	1:E:550:ALA:N	2.44	0.51
1:E:486:PRO:O	1:E:490:LYS:HG3	2.10	0.51
1:E:414:TRP:NE1	1:E:451:GLY:O	2.37	0.51
1:A:291:LYS:NZ	3:A:603:PPV:O32	2.40	0.51
1:B:246:LYS:HD2	1:B:364:MET:HE1	1.93	0.51
1:A:39:GLU:HG3	1:A:49:VAL:HG12	1.93	0.51
1:B:411:PRO:HB2	1:B:516:LEU:HD13	1.92	0.51
1:E:21:LEU:O	1:E:24:ARG:HG3	2.10	0.51
1:B:486:PRO:O	1:B:490:LYS:HG3	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:530:ARG:NH2	1:D:592:LEU:OXT	2.44	0.51
1:B:111:VAL:HG12	1:B:566:ASN:HD21	1.75	0.50
1:C:428:HIS:CD2	1:C:432:ALA:HB3	2.45	0.50
1:E:62:THR:HG23	1:E:77:SER:HB2	1.93	0.50
1:E:491:LEU:HG	1:E:495:PHE:CE1	2.47	0.50
1:C:579:LEU:HD12	1:C:579:LEU:H	1.76	0.50
1:A:507:ALA:HB2	1:A:521:PHE:CD2	2.47	0.50
1:C:320:LEU:O	1:C:324:ILE:HG13	2.11	0.50
1:E:424:THR:HA	1:E:427:LEU:HD13	1.94	0.50
1:C:193:ALA:HB1	1:C:234:LEU:HD11	1.92	0.50
1:C:339:ARG:NH2	1:C:371:GLU:OE2	2.42	0.50
1:C:488:ASP:O	1:C:489:MET:HB2	2.10	0.50
1:E:576:SER:HA	1:E:579:LEU:CD1	2.42	0.50
1:D:513:GLU:HB3	1:D:515:VAL:HG23	1.94	0.50
1:D:440:HIS:HE1	1:D:442:GLU:HB3	1.77	0.49
1:C:74:ASP:HB3	1:C:77:SER:HB3	1.93	0.49
1:C:496:THR:HA	1:C:500:ASP:HB3	1.94	0.49
1:D:530:ARG:O	1:D:534:GLU:HG2	2.13	0.49
1:B:320:LEU:HD23	1:B:337:ILE:HG21	1.94	0.49
1:E:126:LYS:NZ	1:E:150:THR:O	2.45	0.49
1:E:419:LEU:HB3	1:E:423:TYR:HB3	1.94	0.49
1:C:90:ALA:HB3	1:C:93:ASP:HB2	1.95	0.49
1:A:192:ARG:HH22	1:A:257:ARG:HH22	1.59	0.49
1:E:182:ARG:HG2	1:E:266:SER:O	2.13	0.49
1:E:423:TYR:HE2	1:E:529:THR:HG22	1.76	0.49
1:A:529:THR:O	1:A:533:GLN:HG2	2.12	0.49
1:C:549:PHE:CD1	1:C:589:LEU:HB3	2.47	0.49
1:E:488:ASP:N	1:E:488:ASP:OD1	2.45	0.49
1:A:473:VAL:HA	1:A:479:ARG:NH1	2.26	0.49
1:D:190:ARG:HG3	1:D:232:ASP:O	2.12	0.49
1:E:324:ILE:HA	1:E:330:LEU:HD12	1.95	0.49
1:A:185:TRP:HE1	1:A:266:SER:HB3	1.78	0.48
1:A:524:THR:O	1:A:528:VAL:HG22	2.13	0.48
1:B:335:LEU:HD22	1:B:425:PRO:HB3	1.95	0.48
1:A:325:ASP:HA	1:A:331:LYS:CE	2.42	0.48
1:E:339:ARG:HG3	1:E:371:GLU:OE1	2.14	0.48
1:E:431:TYR:OH	1:E:548:LEU:HD11	2.13	0.48
1:A:30:PHE:HB2	1:A:36:PHE:CZ	2.49	0.48
1:A:185:TRP:CZ2	1:A:211:LEU:HD21	2.48	0.48
1:B:208:ARG:HG3	1:B:208:ARG:NH1	2.28	0.48
1:A:434:ASP:O	1:A:468:MET:HG3	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:461:ILE:O	1:E:465:ILE:HG23	2.13	0.48
1:E:488:ASP:O	1:E:489:MET:HB2	2.13	0.48
1:B:49:VAL:HG23	1:B:60:ARG:HG2	1.95	0.48
1:B:153:HIS:CE1	1:B:155:CYS:HB2	2.49	0.48
1:C:123:THR:O	1:C:127:LEU:HG	2.14	0.48
1:B:195:PHE:HB2	1:B:234:LEU:HD22	1.96	0.48
1:B:386:MET:HG3	1:B:446:LEU:HD11	1.96	0.47
1:B:185:TRP:CE2	1:B:211:LEU:HD21	2.49	0.47
1:B:478:VAL:O	1:B:481:VAL:HG22	2.14	0.47
1:B:164:GLY:HA3	1:B:296:VAL:HG23	1.96	0.47
1:E:323:LEU:HD21	1:E:433:TYR:CZ	2.49	0.47
1:A:146:GLU:OE2	1:A:274:GLN:HG3	2.14	0.47
1:C:559:ASN:O	1:C:563:LEU:HD13	2.15	0.47
1:E:312:ALA:HB1	1:E:316:ILE:HD11	1.96	0.47
1:E:428:HIS:HA	1:E:532:TYR:OH	2.14	0.47
1:D:497:ASP:OD1	2:D:602:GOL:H11	2.13	0.47
1:C:423:TYR:CZ	1:C:427:LEU:HD21	2.50	0.47
1:A:553:PHE:HE1	1:A:585:LEU:HD12	1.79	0.47
1:E:289:TYR:HB2	1:E:370:ARG:HB3	1.96	0.47
1:C:92:LEU:HD22	1:C:113:LEU:HD22	1.96	0.47
1:C:428:HIS:HD2	1:C:432:ALA:HB3	1.80	0.47
1:C:470:PRO:HG3	1:C:484:GLU:HB2	1.96	0.46
1:E:153:HIS:CE1	1:E:155:CYS:HB2	2.51	0.46
1:E:516:LEU:HD23	1:E:520:ASP:HB2	1.96	0.46
1:D:60:ARG:HH12	1:D:81:THR:HG21	1.79	0.46
1:A:109:LEU:HB3	1:A:110:PRO:HD3	1.96	0.46
1:B:126:LYS:HD2	1:B:150:THR:HG22	1.98	0.46
1:A:291:LYS:HB3	1:A:368:LEU:HG	1.97	0.46
1:B:291:LYS:HB3	1:B:368:LEU:HG	1.96	0.46
1:D:123:THR:HA	1:D:126:LYS:HE3	1.97	0.46
1:D:185:TRP:O	1:D:186:LEU:HD23	2.15	0.46
1:E:125:TYR:CE2	1:E:177:THR:HG22	2.50	0.46
1:A:197:ALA:HB1	1:A:201:ILE:HB	1.98	0.46
1:B:236:ILE:HG12	1:B:344:VAL:CG2	2.45	0.46
1:E:49:VAL:HG23	1:E:60:ARG:HG2	1.98	0.46
1:B:185:TRP:NE1	1:B:266:SER:HB3	2.30	0.46
1:D:109:LEU:O	1:D:113:LEU:HG	2.14	0.46
1:E:82:ARG:HG2	1:E:83:ASP:OD1	2.15	0.46
1:E:317:ASN:ND2	1:E:340:GLU:HB2	2.31	0.46
1:A:312:ALA:O	1:A:316:ILE:HG13	2.16	0.46
1:C:39:GLU:OE2	1:C:39:GLU:N	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:567:ARG:HE	1:E:567:ARG:HB3	1.56	0.46
1:D:294:LEU:HG	1:D:296:VAL:HG13	1.98	0.46
1:E:30:PHE:HB2	1:E:36:PHE:CZ	2.51	0.46
1:E:323:LEU:HD21	1:E:433:TYR:CE1	2.51	0.46
1:A:377:LEU:HD21	1:A:383:LEU:HD22	1.98	0.45
1:C:277:ARG:NH2	3:C:603:PPV:O22	2.43	0.45
1:C:338:ILE:HG13	1:C:370:ARG:HD3	1.98	0.45
1:D:137:LEU:HB3	1:D:145:LEU:HD23	1.99	0.45
1:A:271:LEU:CD1	1:A:282:ALA:HB2	2.47	0.45
1:C:34:ARG:HH12	1:C:584:THR:H	1.63	0.45
1:D:3:LEU:HD13	1:E:244:TRP:CZ2	2.50	0.45
1:E:98:LEU:HA	1:E:98:LEU:HD23	1.70	0.45
1:E:524:THR:O	1:E:528:VAL:HG12	2.16	0.45
1:E:530:ARG:HA	1:E:533:GLN:HB2	1.98	0.45
1:A:33:GLU:OE1	1:A:557:CYS:HB3	2.16	0.45
1:A:466:VAL:HG13	1:A:468:MET:HG2	1.99	0.45
1:B:447:VAL:HG21	1:B:455:ARG:CZ	2.46	0.45
1:C:145:LEU:O	1:C:149:MET:HG2	2.16	0.45
1:D:489:MET:HA	1:D:492:LEU:HG	1.97	0.45
1:E:579:LEU:HD12	1:E:579:LEU:H	1.81	0.45
1:A:419:LEU:HD12	1:A:419:LEU:H	1.81	0.45
1:B:186:LEU:HD23	1:B:262:CYS:HA	1.97	0.45
1:B:253:ALA:O	1:B:257:ARG:HG3	2.16	0.45
1:E:303:ARG:HA	1:E:303:ARG:HD3	1.84	0.45
1:E:492:LEU:HD23	1:E:495:PHE:HB2	1.99	0.45
1:A:340:GLU:HG2	1:A:368:LEU:HD13	1.99	0.45
1:D:244:TRP:CZ2	1:E:3:LEU:HD23	2.52	0.45
1:D:341:ARG:HH11	1:D:341:ARG:HG3	1.81	0.45
1:E:329:VAL:O	1:E:332:SER:OG	2.29	0.45
1:E:559:ASN:O	1:E:563:LEU:HG	2.17	0.45
1:A:555:LEU:HD13	1:A:585:LEU:HD11	1.98	0.45
1:B:205:SER:O	1:B:209:GLN:HG3	2.16	0.45
1:C:560:ARG:HB3	1:C:580:GLN:OE1	2.17	0.45
1:E:312:ALA:O	1:E:316:ILE:HD12	2.16	0.45
1:E:313:THR:HG23	1:E:462:ALA:HB3	1.97	0.45
1:A:415:LEU:HG	1:A:419:LEU:HD11	1.99	0.45
1:B:540:ASP:O	1:B:544:ARG:HG3	2.16	0.45
1:D:115:GLU:OE1	1:D:566:ASN:ND2	2.48	0.45
1:C:72:GLN:NE2	1:C:512:THR:OG1	2.45	0.44
1:D:184:VAL:HG22	1:E:3:LEU:HD11	1.98	0.44
1:E:201:ILE:HD11	1:E:341:ARG:CZ	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:9:HIS:O	1:E:124:CYS:HB3	2.17	0.44
1:E:516:LEU:CD2	1:E:520:ASP:HB2	2.47	0.44
1:B:591:GLY:C	1:B:592:LEU:HD23	2.38	0.44
1:D:402:GLU:O	1:D:406:ARG:HG3	2.17	0.44
1:A:44:GLN:HB3	1:A:47:ARG:HB3	1.99	0.44
1:B:280:PHE:HZ	1:B:285:PRO:HB3	1.82	0.44
1:E:102:LEU:HB3	1:E:563:LEU:HD13	1.98	0.44
1:E:321:ASP:HA	1:E:324:ILE:HD12	2.00	0.44
1:B:340:GLU:HG2	1:B:368:LEU:HD13	1.99	0.44
1:B:47:ARG:HD2	1:B:62:THR:HG22	1.99	0.44
1:E:204:ALA:O	1:E:208:ARG:NH1	2.51	0.44
1:E:226:ARG:NE	1:E:258:GLN:HE21	2.15	0.44
1:C:543:PHE:HD1	1:C:543:PHE:N	2.16	0.44
1:D:253:ALA:HA	1:E:15:TRP:CZ2	2.53	0.44
1:C:386:MET:HE2	1:C:444:THR:HB	2.00	0.44
1:D:270:TYR:HB3	1:D:279:PHE:HB3	1.99	0.43
1:E:56:LEU:O	1:E:82:ARG:HG3	2.18	0.43
1:E:163:LEU:HD23	1:E:163:LEU:HA	1.63	0.43
1:C:185:TRP:HE1	1:C:266:SER:HB3	1.83	0.43
1:D:168:ASP:HB3	1:E:244:TRP:CZ3	2.53	0.43
1:E:533:GLN:HA	1:E:543:PHE:CE2	2.49	0.43
1:C:543:PHE:N	1:C:543:PHE:CD1	2.85	0.43
1:C:488:ASP:N	1:C:488:ASP:OD1	2.52	0.43
1:C:495:PHE:O	1:C:499:PHE:HB2	2.18	0.43
1:A:66:ARG:HH21	1:A:511:ALA:HB1	1.84	0.43
1:B:187:ALA:O	1:B:260:LEU:HA	2.19	0.43
1:B:397:ARG:NH1	1:B:402:GLU:OE2	2.52	0.43
1:D:203:TYR:O	1:D:207:VAL:HG22	2.19	0.43
1:E:381:GLU:HA	1:E:448:LEU:O	2.18	0.43
1:D:442:GLU:OE2	1:D:459:LYS:NZ	2.52	0.43
1:E:509:GLY:O	1:E:513:GLU:HB2	2.19	0.43
1:B:27:LEU:HD12	1:B:78:ILE:HD13	2.01	0.43
1:C:492:LEU:HD22	1:C:496:THR:HG21	2.00	0.43
1:C:530:ARG:HA	1:C:533:GLN:HB2	2.01	0.43
1:E:560:ARG:HH11	2:E:603:GOL:H11	1.84	0.43
1:B:480:ARG:H	1:B:480:ARG:HG2	1.65	0.43
1:D:291:LYS:HB3	1:D:368:LEU:HG	2.01	0.43
1:B:493:SER:O	1:B:497:ASP:HB2	2.18	0.43
1:E:553:PHE:CE1	1:E:585:LEU:HD12	2.53	0.43
1:E:175:PRO:HB3	1:E:273:GLN:O	2.19	0.42
1:E:219:PHE:O	1:E:222:VAL:HG22	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:244:TRP:CZ3	1:B:168:ASP:HB3	2.54	0.42
1:B:430:PHE:CZ	1:B:491:LEU:HD13	2.53	0.42
1:B:489:MET:HA	1:B:492:LEU:CD2	2.49	0.42
1:E:153:HIS:HE1	1:E:155:CYS:HB2	1.84	0.42
1:D:276:ILE:H	1:D:276:ILE:CD1	2.28	0.42
1:D:491:LEU:HD12	1:D:491:LEU:HA	1.85	0.42
1:E:291:LYS:HB3	1:E:368:LEU:HG	2.00	0.42
1:E:210:GLU:O	1:E:211:LEU:HD23	2.18	0.42
1:A:15:TRP:CZ2	1:B:253:ALA:HA	2.54	0.42
1:E:25:LYS:HD2	1:E:151:GLU:OE2	2.18	0.42
1:E:539:LEU:O	1:E:542:ARG:N	2.49	0.42
1:B:270:TYR:HB3	1:B:279:PHE:HB3	2.01	0.42
1:B:280:PHE:CZ	1:B:285:PRO:HB3	2.54	0.42
1:C:35:LEU:HD13	1:C:102:LEU:HD22	2.02	0.42
1:C:50:VAL:HG23	1:C:61:PHE:HE1	1.84	0.42
1:C:341:ARG:HG2	1:C:371:GLU:HG3	2.00	0.42
1:D:289:TYR:HB2	1:D:370:ARG:HB3	2.00	0.42
1:D:320:LEU:HD23	1:D:337:ILE:HG21	2.02	0.42
1:E:377:LEU:HD11	1:E:383:LEU:CD2	2.49	0.42
1:B:428:HIS:HA	1:B:532:TYR:OH	2.18	0.42
1:C:386:MET:HG3	1:C:446:LEU:HD11	2.00	0.42
1:B:423:TYR:CZ	1:B:427:LEU:HD21	2.53	0.42
1:B:56:LEU:HB2	1:B:82:ARG:HH21	1.84	0.42
1:C:145:LEU:HD13	1:C:384:THR:OG1	2.19	0.42
1:D:507:ALA:HB2	1:D:521:PHE:CD1	2.54	0.42
1:E:275:SER:C	1:E:276:ILE:HG13	2.40	0.42
1:E:294:LEU:O	1:E:296:VAL:N	2.53	0.42
1:E:19:ASN:OD1	1:E:91:ALA:N	2.39	0.42
1:E:356:ASP:O	1:E:362:ARG:NE	2.53	0.42
1:A:383:LEU:HD13	1:A:383:LEU:HA	1.82	0.41
1:B:162:ARG:HD2	1:B:162:ARG:N	2.35	0.41
1:B:209:GLN:HE21	1:B:209:GLN:HB3	1.66	0.41
1:D:317:ASN:OD1	1:D:340:GLU:N	2.49	0.41
1:D:320:LEU:O	1:D:324:ILE:HG13	2.21	0.41
1:E:215:THR:HG23	1:E:218:ARG:NH2	2.34	0.41
1:E:503:PHE:O	1:E:506:LEU:N	2.52	0.41
1:A:226:ARG:HE	1:A:258:GLN:HE21	1.66	0.41
1:B:246:LYS:HE3	5:B:608:SO4:O3	2.19	0.41
1:E:437:PHE:C	1:E:439:PRO:HD3	2.41	0.41
1:A:350:GLU:OE1	1:A:350:GLU:N	2.46	0.41
1:D:348:HIS:CE1	1:D:351:TYR:CD2	3.08	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:488:ASP:O	1:D:489:MET:HB2	2.21	0.41
1:A:226:ARG:HH21	1:A:258:GLN:HE21	1.69	0.41
1:B:131:GLN:HB3	1:B:394:HIS:CE1	2.55	0.41
1:D:145:LEU:HD23	1:D:145:LEU:HA	1.81	0.41
1:E:174:ALA:HB3	1:E:177:THR:HG23	2.02	0.41
1:A:335:LEU:HD22	1:A:425:PRO:HB3	2.03	0.41
1:A:382:SER:OG	1:A:448:LEU:HB2	2.21	0.41
1:B:185:TRP:CZ2	1:B:211:LEU:HD21	2.55	0.41
1:C:280:PHE:HD1	1:C:289:TYR:CE1	2.38	0.41
1:C:299:MET:O	1:C:299:MET:HG2	2.20	0.41
1:D:497:ASP:OD2	2:D:602:GOL:H32	2.21	0.41
1:E:394:HIS:ND1	1:E:394:HIS:N	2.65	0.41
1:E:498:VAL:HG12	1:E:499:PHE:CD1	2.55	0.41
1:A:489:MET:CE	1:A:576:SER:HB3	2.47	0.41
1:C:418:TYR:HB2	1:C:453:VAL:HG11	2.02	0.41
1:C:499:PHE:HD1	1:C:503:PHE:HD1	1.68	0.41
1:C:81:THR:HA	1:C:85:ALA:O	2.20	0.41
1:A:260:LEU:HD23	1:A:260:LEU:HA	1.85	0.41
1:A:284:HIS:HB2	1:A:287:LYS:HD2	2.03	0.41
1:A:348:HIS:O	1:A:352:GLU:HG3	2.21	0.41
1:A:436:ALA:HB3	1:A:466:VAL:HG12	2.01	0.41
1:A:447:VAL:HG21	1:A:455:ARG:CZ	2.51	0.41
1:A:526:ALA:HB2	1:A:589:LEU:HD22	2.03	0.41
1:B:56:LEU:HB3	1:B:82:ARG:HE	1.85	0.41
1:B:163:LEU:HD23	1:B:163:LEU:HA	1.93	0.41
1:C:195:PHE:HE2	1:C:197:ALA:HB2	1.85	0.41
1:C:553:PHE:O	1:C:584:THR:HG23	2.21	0.41
1:D:49:VAL:HG23	1:D:60:ARG:HG2	2.02	0.41
1:D:374:VAL:N	1:D:375:PRO:HD2	2.35	0.41
1:E:327:ASP:OD2	1:E:428:HIS:NE2	2.53	0.41
1:E:423:TYR:CE2	1:E:529:THR:HG22	2.55	0.41
1:B:163:LEU:HB2	1:B:297:LEU:HB3	2.02	0.41
1:D:346:TYR:CG	1:D:365:LEU:HD23	2.56	0.41
1:E:568:GLN:HG3	1:E:570:VAL:O	2.21	0.41
1:A:491:LEU:HD23	1:A:495:PHE:CE2	2.56	0.40
1:B:49:VAL:HG23	1:B:60:ARG:CG	2.50	0.40
1:C:277:ARG:HB2	1:C:292:THR:O	2.20	0.40
1:E:271:LEU:O	1:E:273:GLN:NE2	2.53	0.40
1:E:424:THR:OG1	1:E:425:PRO:HD3	2.22	0.40
1:A:24:ARG:HG3	1:A:25:LYS:N	2.36	0.40
1:A:547:ASP:OD1	1:A:549:PHE:N	2.48	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:162:ARG:HE	1:C:276:ILE:HD11	1.85	0.40
1:D:486:PRO:O	1:D:488:ASP:O	2.39	0.40
1:E:227:GLY:C	1:E:228:LEU:HD23	2.42	0.40
1:A:442:GLU:OE1	4:A:604:AMP:H5'2	2.21	0.40
1:A:564:ARG:HD3	1:A:580:GLN:NE2	2.35	0.40
1:B:239:HIS:CG	1:B:294:LEU:HD13	2.56	0.40
1:C:89:LEU:HA	1:C:89:LEU:HD23	1.64	0.40
1:C:204:ALA:O	1:C:208:ARG:HD2	2.22	0.40
1:D:193:ALA:HB1	1:D:234:LEU:HD11	2.03	0.40
1:C:156:PHE:CE2	1:C:558:LEU:HD13	2.56	0.40
1:C:190:ARG:HG2	1:C:234:LEU:HD23	2.04	0.40
1:D:53:ASP:OD1	1:D:101:THR:OG1	2.39	0.40
1:E:281:ASN:ND2	1:E:287:LYS:HD3	2.36	0.40
1:C:407:SER:O	1:C:409:LEU:HD12	2.21	0.40
1:E:492:LEU:HD23	1:E:492:LEU:HA	1.94	0.40

All (1) 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)
1:B:480:ARG:NH1	1:E:42:ASP:O[5_555]	2.18	0.02

## 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	588/612 (96%)	557 (95%)	29 (5%)	2 (0%)	41 71
1	B	590/612 (96%)	564 (96%)	24 (4%)	2 (0%)	41 71
1	C	589/612 (96%)	554 (94%)	34 (6%)	1 (0%)	47 78
1	D	589/612 (96%)	563 (96%)	25 (4%)	1 (0%)	47 78

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	E	589/612 (96%)	545 (92%)	42 (7%)	2 (0%)	41	71
All	All	2945/3060 (96%)	2783 (94%)	154 (5%)	8 (0%)	41	71

All (8) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	276	ILE
1	E	44	GLN
1	D	439	PRO
1	B	276	ILE
1	B	439	PRO
1	A	439	PRO
1	C	515	VAL
1	E	276	ILE

### 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	484/504 (96%)	474 (98%)	10 (2%)	53	81
1	B	481/504 (95%)	469 (98%)	12 (2%)	47	78
1	C	478/504 (95%)	469 (98%)	9 (2%)	57	84
1	D	479/504 (95%)	470 (98%)	9 (2%)	57	84
1	E	481/504 (95%)	466 (97%)	15 (3%)	40	74
All	All	2403/2520 (95%)	2348 (98%)	55 (2%)	50	80

All (55) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	24	ARG
1	A	36	PHE
1	A	49	VAL
1	A	271	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	385	THR
1	A	419	LEU
1	A	440	HIS
1	A	466	VAL
1	A	553	PHE
1	A	564	ARG
1	B	82	ARG
1	B	93	ASP
1	B	106	ASP
1	B	202	ASP
1	B	275	SER
1	B	306	SER
1	B	383	LEU
1	B	466	VAL
1	B	492	LEU
1	B	512	THR
1	B	539	LEU
1	B	586	ARG
1	C	2	SER
1	C	37	THR
1	C	202	ASP
1	C	208	ARG
1	C	325	ASP
1	C	347	ARG
1	C	519	ASP
1	C	542	ARG
1	C	586	ARG
1	D	47	ARG
1	D	202	ASP
1	D	217	GLU
1	D	234	LEU
1	D	267	ASP
1	D	322	ARG
1	D	323	LEU
1	D	493	SER
1	D	519	ASP
1	E	24	ARG
1	E	36	PHE
1	E	47	ARG
1	E	69	ASP
1	E	99	ARG
1	E	179	HIS

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Mol	Chain	Res	Type
1	E	336	SER
1	E	344	VAL
1	E	358	TYR
1	E	397	ARG
1	E	419	LEU
1	E	548	LEU
1	E	567	ARG
1	E	576	SER
1	E	584	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (13) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	258	GLN
1	B	209	GLN
1	B	258	GLN
1	B	284	HIS
1	C	258	GLN
1	C	326	ASN
1	E	100	HIS
1	E	131	GLN
1	E	143	GLN
1	E	160	ASN
1	E	209	GLN
1	E	258	GLN
1	E	274	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](#)

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

Of 42 ligands modelled in this entry, 10 are monoatomic - leaving 32 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
5	SO4	B	608	-	4,4,4	0.29	0	6,6,6	0.61	0
3	PPV	B	606	6	6,8,8	1.18	0	13,13,13	0.83	0
2	GOL	C	601	-	5,5,5	0.96	0	5,5,5	1.05	0
2	GOL	B	603	-	5,5,5	1.19	1 (20%)	5,5,5	1.08	0
3	PPV	C	603	6	6,8,8	0.78	0	13,13,13	0.81	0
5	SO4	A	605	-	4,4,4	0.40	0	6,6,6	0.66	0
5	SO4	B	610	-	4,4,4	0.41	0	6,6,6	0.52	0
2	GOL	B	602	-	5,5,5	1.70	1 (20%)	5,5,5	0.88	0
2	GOL	C	602	-	5,5,5	0.89	0	5,5,5	0.88	0
2	GOL	E	602	-	5,5,5	0.86	0	5,5,5	1.25	0
3	PPV	E	604	6	6,8,8	0.71	0	13,13,13	0.87	0
2	GOL	E	603	-	5,5,5	1.28	0	5,5,5	0.75	0
2	GOL	D	601	-	5,5,5	0.83	0	5,5,5	1.12	0
4	AMP	B	607	6	22,25,25	0.92	1 (4%)	25,38,38	1.41	3 (12%)
4	AMP	C	604	6	22,25,25	1.00	2 (9%)	25,38,38	1.34	3 (12%)
5	SO4	B	609	-	4,4,4	0.41	0	6,6,6	0.56	0
2	GOL	D	602	-	5,5,5	1.04	0	5,5,5	1.24	1 (20%)
2	GOL	A	601	-	5,5,5	1.26	1 (20%)	5,5,5	0.78	0
3	PPV	D	603	6	6,8,8	0.78	0	13,13,13	0.77	0
4	AMP	E	605	6	22,25,25	1.07	1 (4%)	25,38,38	1.42	4 (16%)
2	GOL	B	601	-	5,5,5	1.81	2 (40%)	5,5,5	1.09	0
5	SO4	D	607	-	4,4,4	0.18	0	6,6,6	0.11	0
5	SO4	D	605	-	4,4,4	0.39	0	6,6,6	0.34	0
2	GOL	E	601	-	5,5,5	1.58	2 (40%)	5,5,5	0.91	0
3	PPV	A	603	6	6,8,8	0.80	0	13,13,13	0.86	0
4	AMP	A	604	6	22,25,25	0.84	1 (4%)	25,38,38	1.49	4 (16%)
4	AMP	D	604	6	22,25,25	0.91	2 (9%)	25,38,38	1.18	2 (8%)
2	GOL	A	602	-	5,5,5	0.66	0	5,5,5	1.24	0
2	GOL	B	605	-	5,5,5	1.14	0	5,5,5	0.80	0
5	SO4	D	606	-	4,4,4	0.27	0	6,6,6	0.13	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
5	SO4	E	606	-	4,4,4	0.33	0	6,6,6	0.43	0
2	GOL	B	604	-	5,5,5	1.50	2 (40%)	5,5,5	0.98	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	PPV	B	606	6	-	0/6/6/6	-
2	GOL	C	601	-	-	0/4/4/4	-
2	GOL	B	603	-	-	2/4/4/4	-
3	PPV	C	603	6	-	0/6/6/6	-
2	GOL	B	602	-	-	0/4/4/4	-
2	GOL	C	602	-	-	2/4/4/4	-
2	GOL	E	602	-	-	2/4/4/4	-
3	PPV	E	604	6	-	0/6/6/6	-
2	GOL	E	603	-	-	0/4/4/4	-
2	GOL	D	601	-	-	2/4/4/4	-
4	AMP	B	607	6	-	4/6/26/26	0/3/3/3
4	AMP	C	604	6	-	4/6/26/26	0/3/3/3
2	GOL	D	602	-	-	1/4/4/4	-
2	GOL	A	601	-	-	4/4/4/4	-
3	PPV	D	603	6	-	0/6/6/6	-
4	AMP	E	605	6	-	5/6/26/26	0/3/3/3
2	GOL	B	601	-	-	0/4/4/4	-
2	GOL	E	601	-	-	2/4/4/4	-
3	PPV	A	603	6	-	0/6/6/6	-
4	AMP	A	604	6	-	3/6/26/26	0/3/3/3
4	AMP	D	604	6	-	4/6/26/26	0/3/3/3
2	GOL	A	602	-	-	2/4/4/4	-
2	GOL	B	605	-	-	4/4/4/4	-
2	GOL	B	604	-	-	2/4/4/4	-

All (16) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	601	GOL	C3-C2	3.41	1.65	1.51
2	B	602	GOL	C3-C2	3.10	1.64	1.51

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	E	605	AMP	C5-C4	3.07	1.49	1.40
2	E	601	GOL	C3-C2	2.56	1.62	1.51
4	C	604	AMP	C5-C4	2.56	1.47	1.40
2	B	604	GOL	C3-C2	2.49	1.62	1.51
4	A	604	AMP	C5-C4	2.46	1.47	1.40
2	E	601	GOL	C1-C2	2.42	1.61	1.51
2	B	603	GOL	C1-C2	2.40	1.61	1.51
4	D	604	AMP	C5-C4	2.39	1.47	1.40
4	B	607	AMP	C5-C4	2.22	1.46	1.40
4	C	604	AMP	C2-N3	2.20	1.35	1.32
2	A	601	GOL	C3-C2	2.15	1.60	1.51
2	B	601	GOL	C1-C2	2.11	1.60	1.51
2	B	604	GOL	C1-C2	2.07	1.60	1.51
4	D	604	AMP	C2-N3	2.03	1.35	1.32

All (17) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	E	605	AMP	N3-C2-N1	-3.47	123.26	128.68
4	A	604	AMP	O5'-P-O1P	-3.43	96.86	106.47
4	B	607	AMP	N3-C2-N1	-3.39	123.37	128.68
4	A	604	AMP	N3-C2-N1	-3.22	123.65	128.68
4	C	604	AMP	O3P-P-O5'	-3.12	98.43	106.73
4	B	607	AMP	O5'-P-O1P	-3.06	97.88	106.47
4	B	607	AMP	C4-C5-N7	-3.00	106.27	109.40
4	C	604	AMP	N3-C2-N1	-2.93	124.10	128.68
4	D	604	AMP	N3-C2-N1	-2.78	124.34	128.68
4	C	604	AMP	C4-C5-N7	-2.67	106.62	109.40
4	E	605	AMP	O5'-P-O1P	-2.58	99.23	106.47
4	A	604	AMP	O3P-P-O2P	2.47	117.07	107.64
4	E	605	AMP	N6-C6-N1	2.44	123.64	118.57
4	A	604	AMP	O2P-P-O5'	-2.41	100.32	106.73
4	E	605	AMP	O3P-P-O2P	2.23	116.16	107.64
4	D	604	AMP	C4-C5-N7	-2.11	107.20	109.40
2	D	602	GOL	C3-C2-C1	-2.02	103.86	111.70

There are no chirality outliers.

All (43) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	601	GOL	O1-C1-C2-C3
2	A	601	GOL	C1-C2-C3-O3

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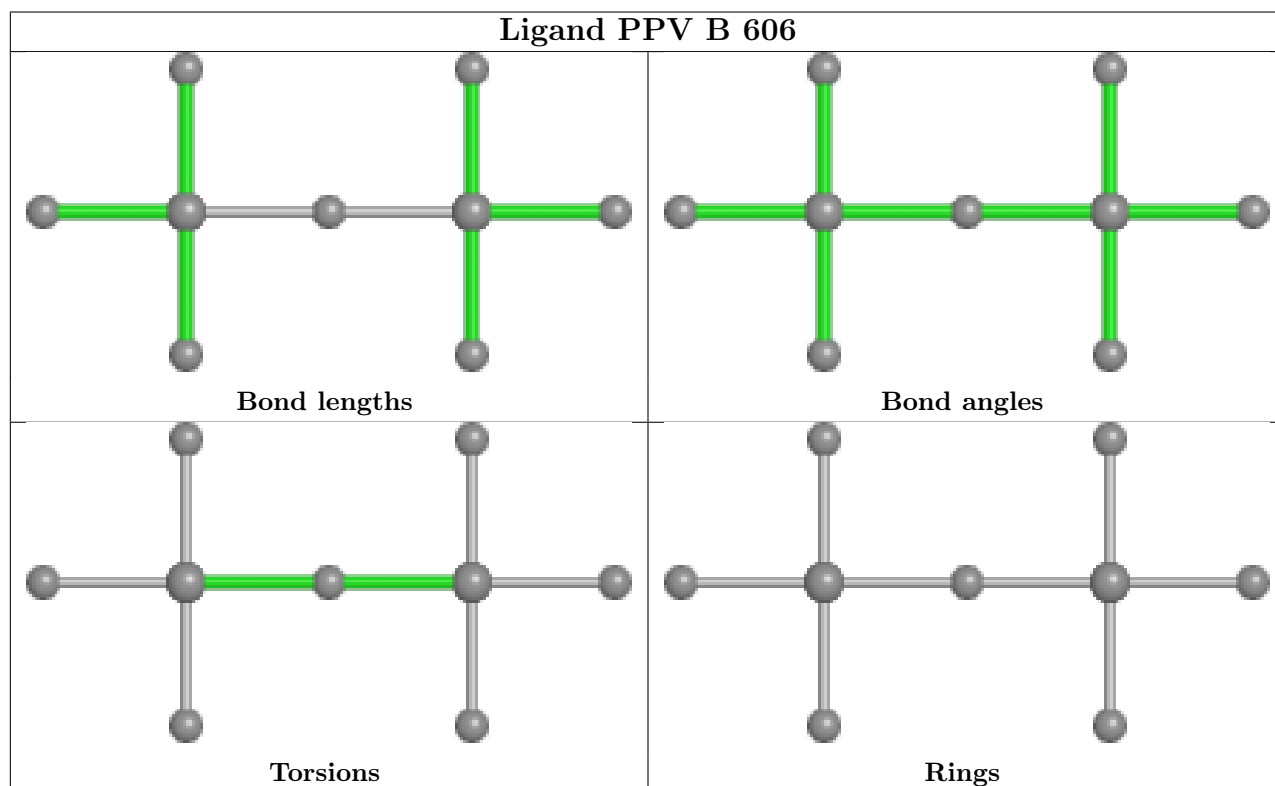
Mol	Chain	Res	Type	Atoms
2	A	602	GOL	O1-C1-C2-O2
2	A	602	GOL	O1-C1-C2-C3
2	B	603	GOL	C1-C2-C3-O3
2	B	604	GOL	O1-C1-C2-O2
2	B	604	GOL	O1-C1-C2-C3
2	B	605	GOL	C1-C2-C3-O3
2	E	601	GOL	C1-C2-C3-O3
2	E	602	GOL	O1-C1-C2-C3
4	B	607	AMP	C5'-O5'-P-O1P
4	B	607	AMP	C5'-O5'-P-O2P
4	B	607	AMP	C5'-O5'-P-O3P
4	C	604	AMP	C5'-O5'-P-O2P
4	C	604	AMP	C5'-O5'-P-O3P
4	D	604	AMP	C5'-O5'-P-O1P
4	D	604	AMP	C5'-O5'-P-O2P
4	D	604	AMP	C5'-O5'-P-O3P
4	E	605	AMP	C5'-O5'-P-O2P
4	E	605	AMP	C5'-O5'-P-O3P
2	B	605	GOL	O1-C1-C2-C3
2	C	602	GOL	C1-C2-C3-O3
2	D	601	GOL	O1-C1-C2-C3
2	A	601	GOL	O1-C1-C2-O2
2	B	605	GOL	O2-C2-C3-O3
2	E	601	GOL	O2-C2-C3-O3
2	E	602	GOL	O1-C1-C2-O2
2	A	601	GOL	O2-C2-C3-O3
2	B	603	GOL	O2-C2-C3-O3
2	B	605	GOL	O1-C1-C2-O2
2	D	601	GOL	O1-C1-C2-O2
4	C	604	AMP	C5'-O5'-P-O1P
4	E	605	AMP	C5'-O5'-P-O1P
4	A	604	AMP	O4'-C4'-C5'-O5'
4	E	605	AMP	O4'-C4'-C5'-O5'
2	D	602	GOL	O2-C2-C3-O3
2	C	602	GOL	O2-C2-C3-O3
4	D	604	AMP	O4'-C4'-C5'-O5'
4	A	604	AMP	C3'-C4'-C5'-O5'
4	A	604	AMP	C5'-O5'-P-O3P
4	B	607	AMP	O4'-C4'-C5'-O5'
4	C	604	AMP	O4'-C4'-C5'-O5'
4	E	605	AMP	C3'-C4'-C5'-O5'

There are no ring outliers.

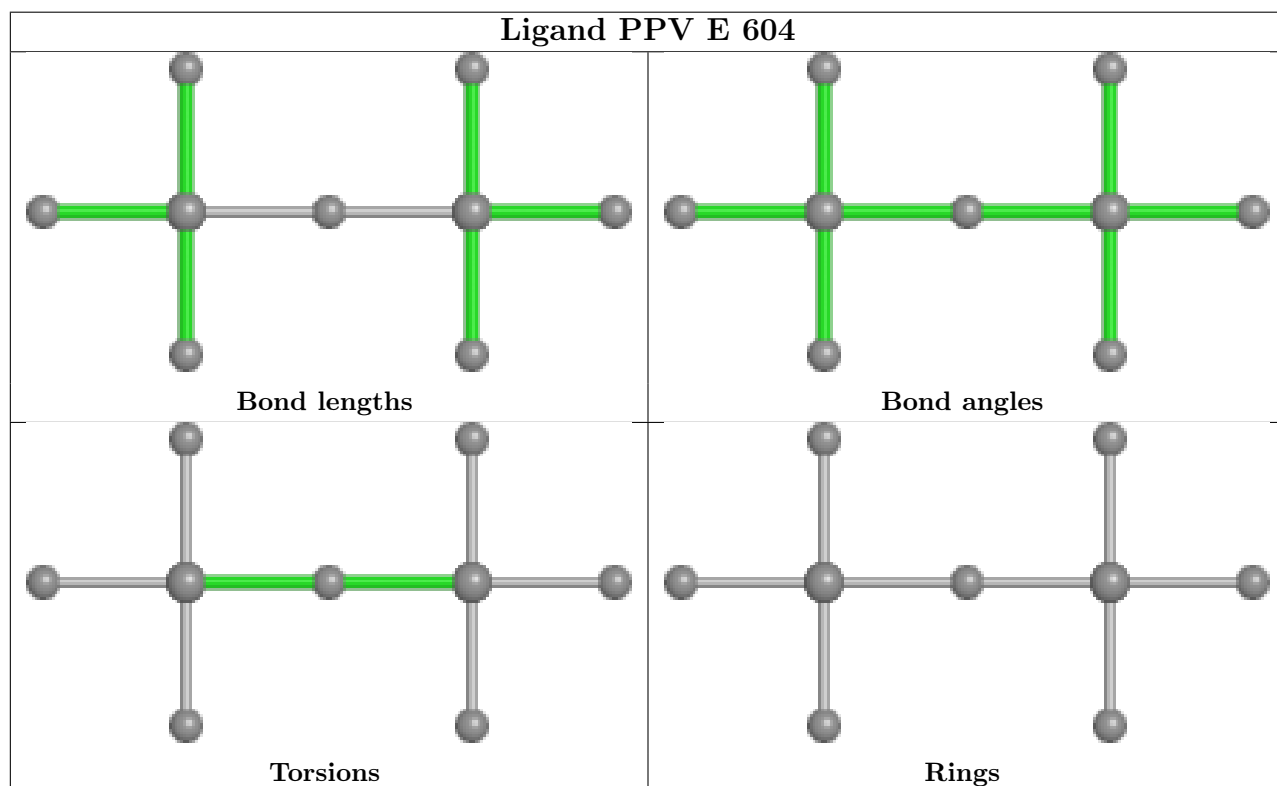
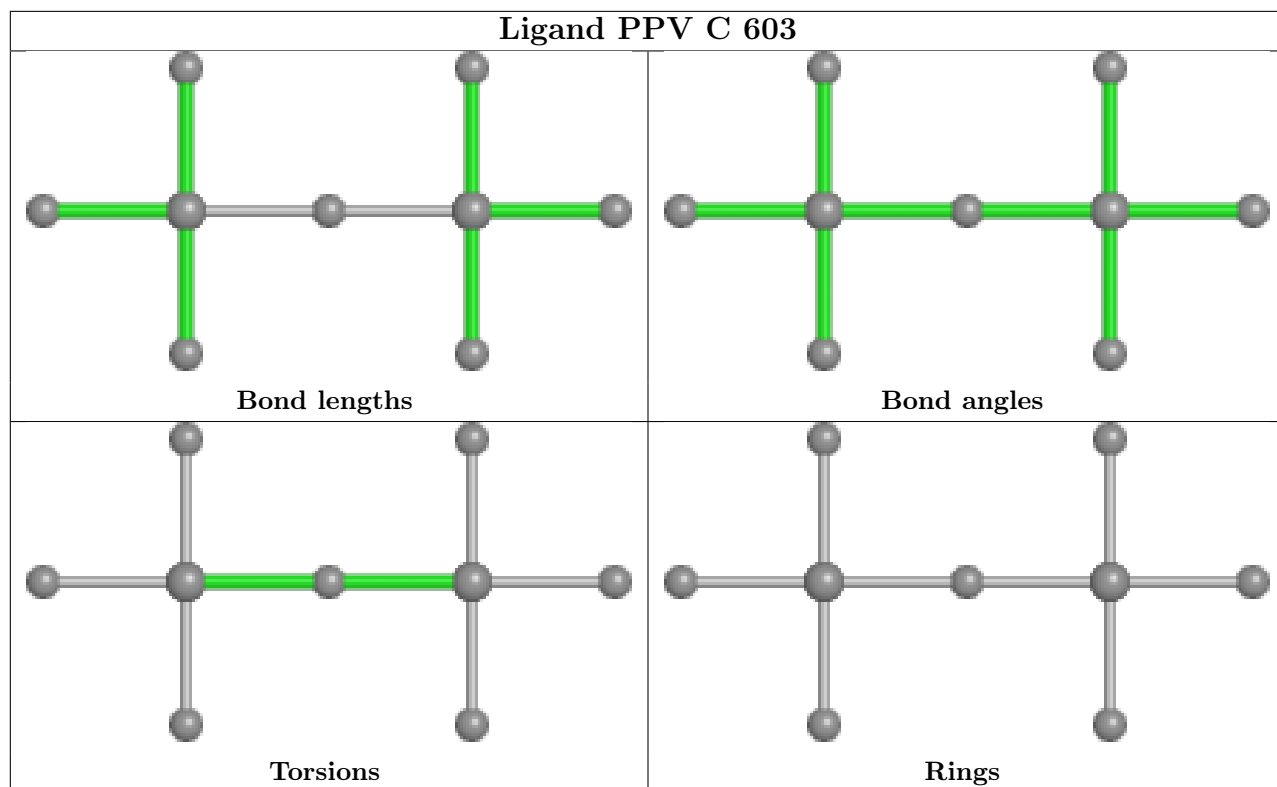
8 monomers are involved in 12 short contacts:

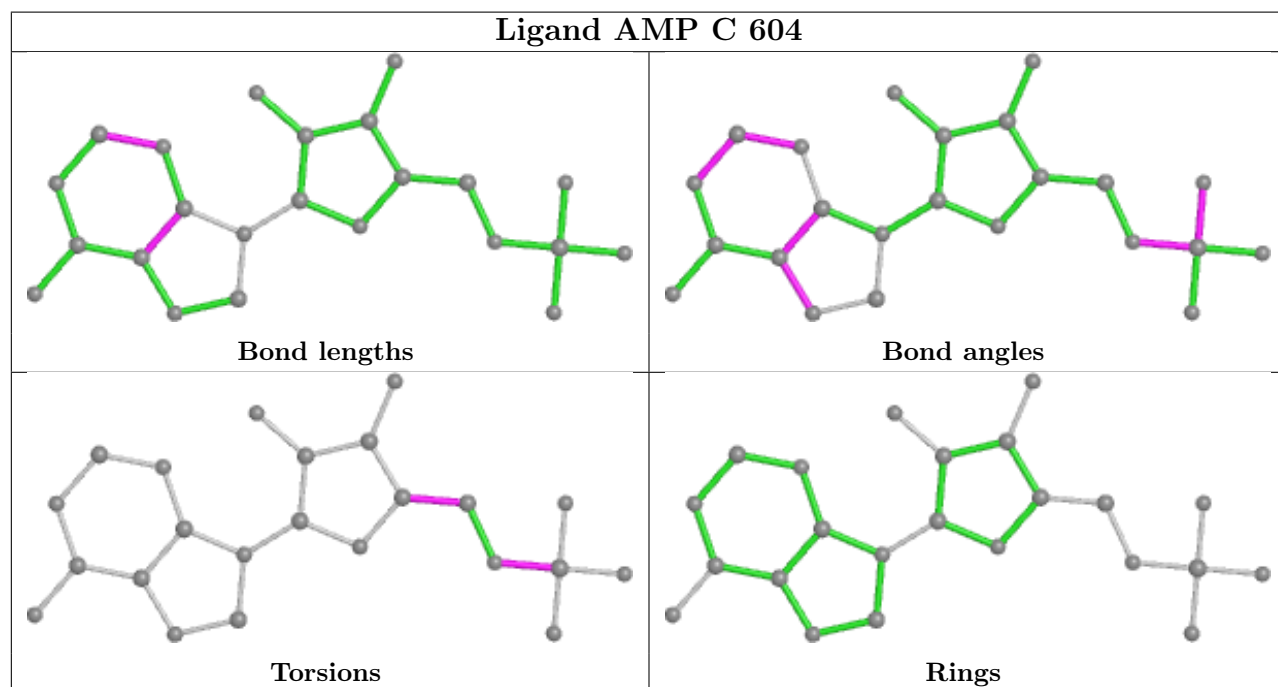
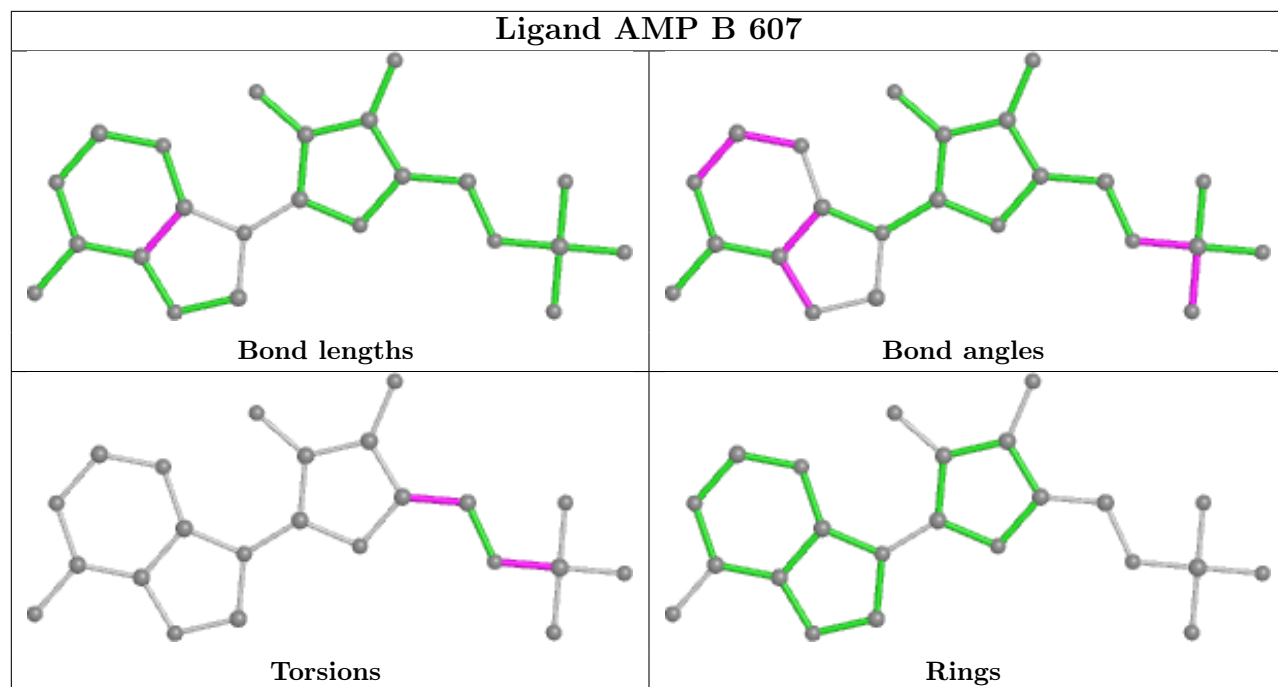
Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	B	608	SO4	1	0
3	C	603	PPV	1	0
3	E	604	PPV	2	0
2	E	603	GOL	3	0
2	D	601	GOL	1	0
2	D	602	GOL	2	0
3	A	603	PPV	1	0
4	A	604	AMP	1	0

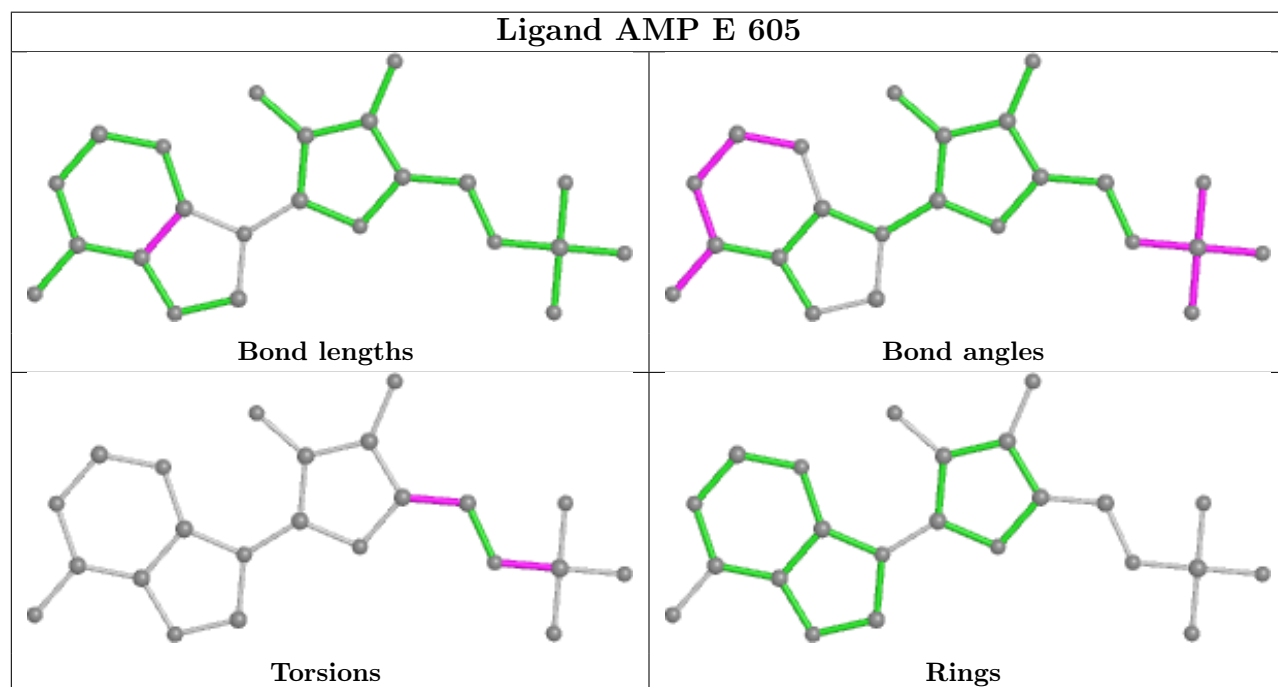
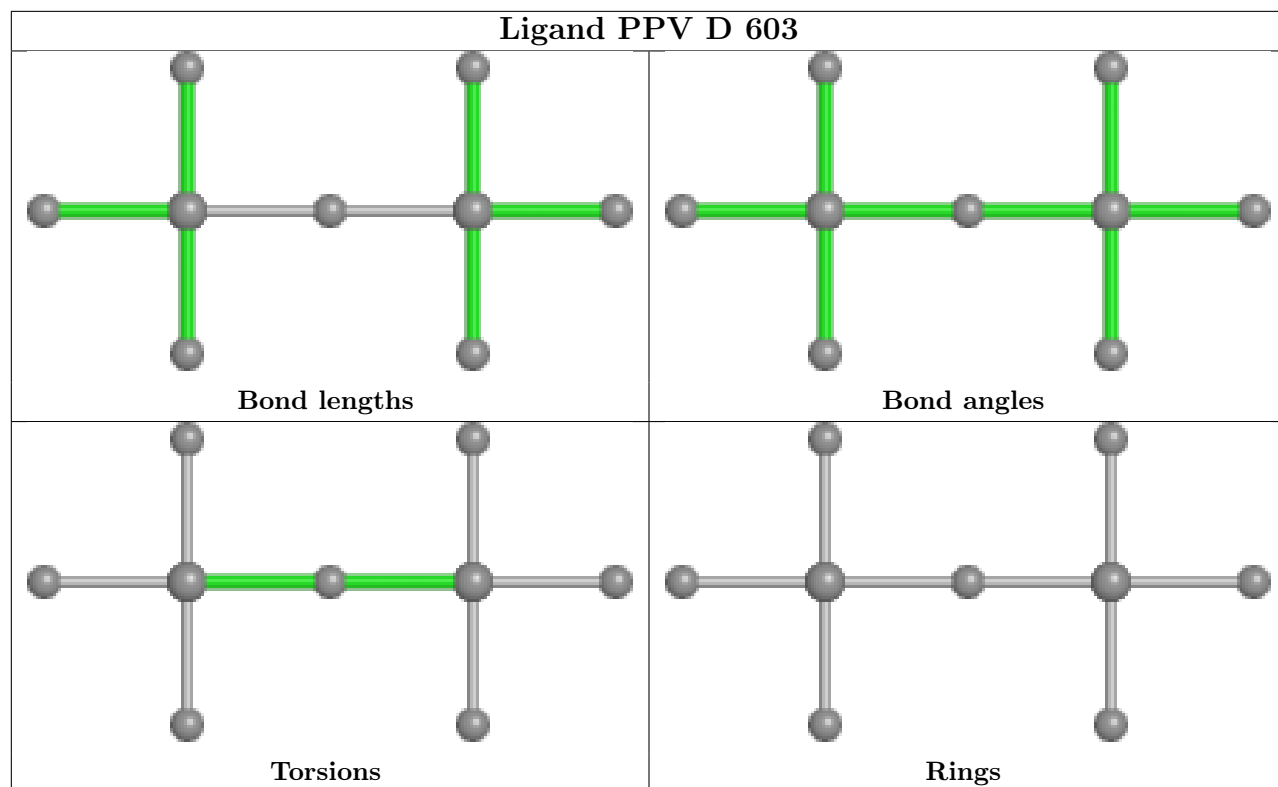
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

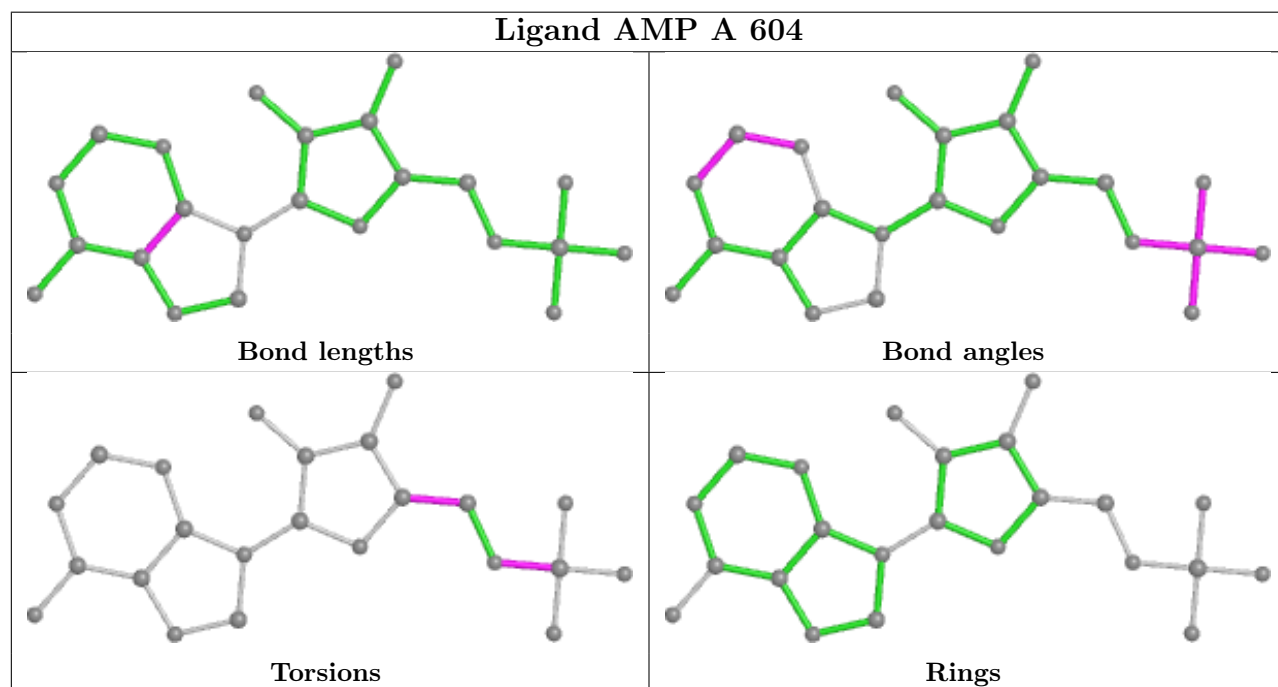
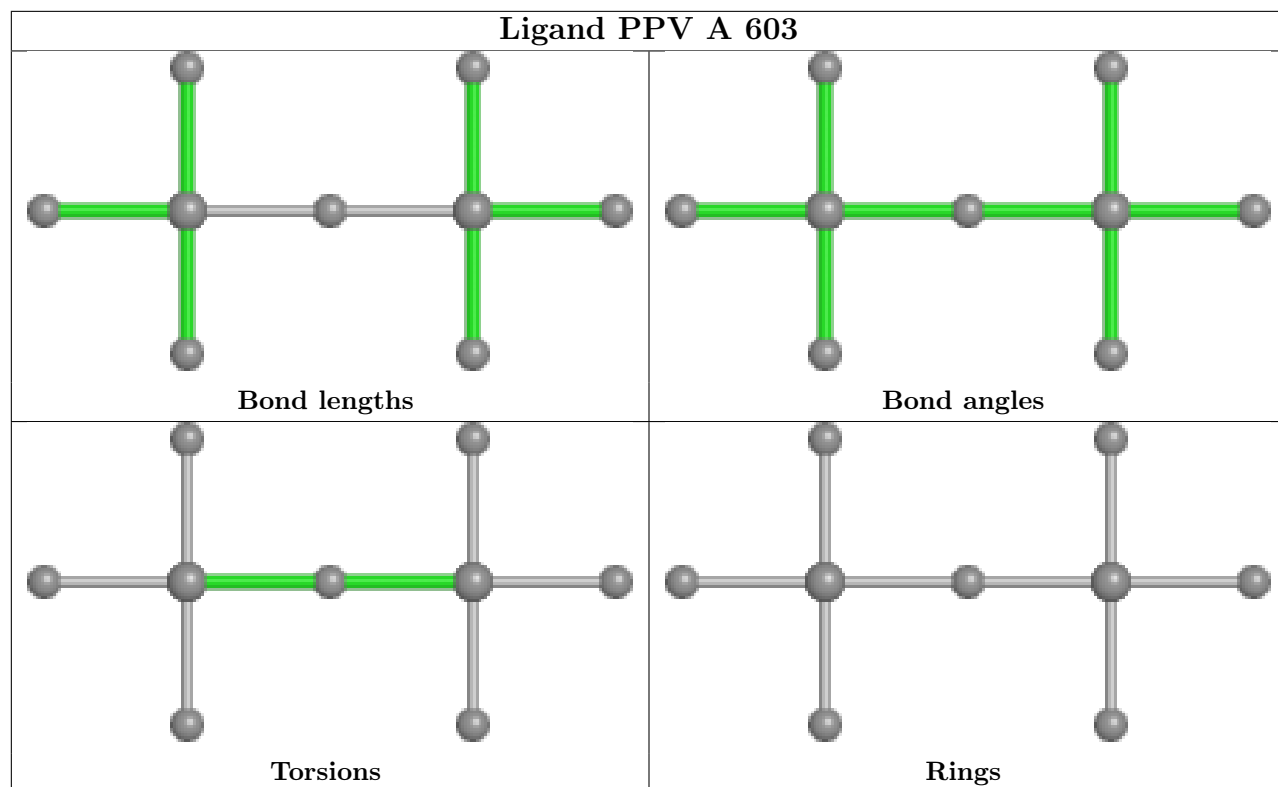


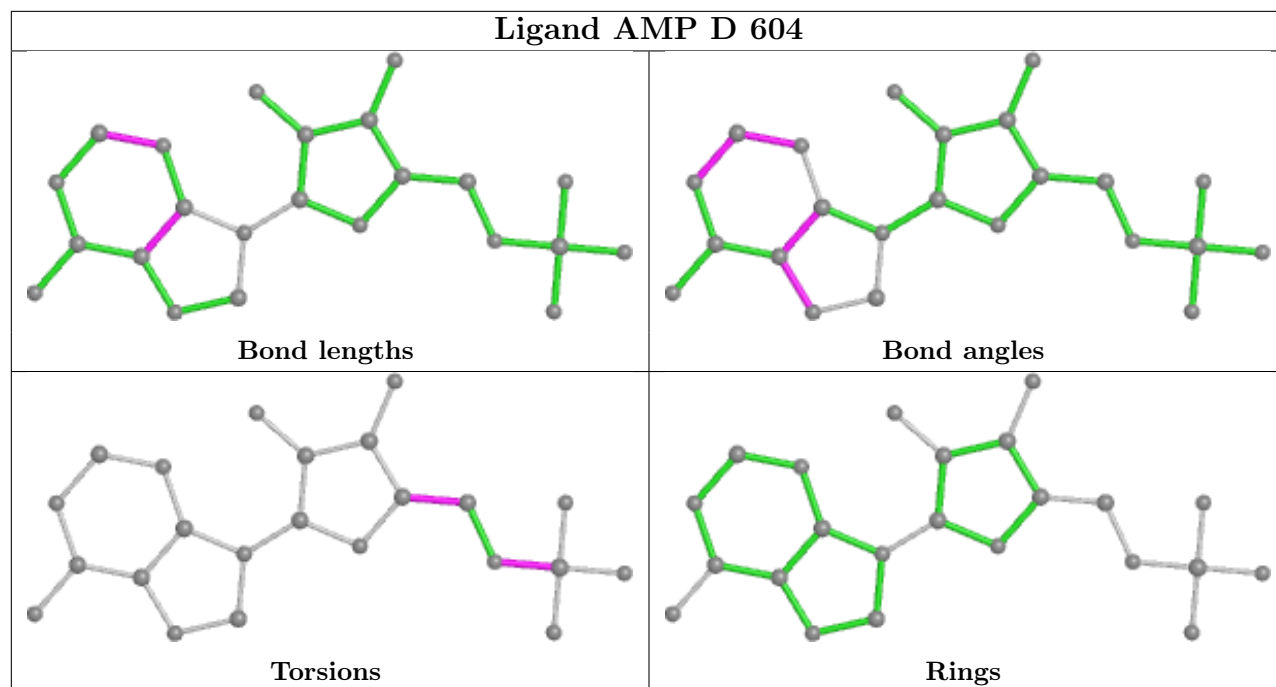












## 5.7 Other polymers [i](#)

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	590/612 (96%)	-0.07	6 (1%) 82 82	52, 76, 116, 180	0
1	B	592/612 (96%)	-0.17	4 (0%) 87 87	50, 68, 100, 147	0
1	C	591/612 (96%)	0.03	19 (3%) 47 43	60, 92, 137, 153	0
1	D	591/612 (96%)	-0.09	5 (0%) 86 86	60, 75, 103, 150	0
1	E	591/612 (96%)	0.20	28 (4%) 31 28	59, 99, 141, 171	0
All	All	2955/3060 (96%)	-0.02	62 (2%) 63 61	50, 79, 130, 180	0

All (62) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	573	ALA	5.3
1	C	41	ALA	4.4
1	E	573	ALA	4.2
1	C	42	ASP	4.2
1	C	473	VAL	4.0
1	C	573	ALA	3.9
1	C	578	ALA	3.7
1	C	577	ALA	3.5
1	E	574	ASP	3.5
1	E	444	THR	3.2
1	E	440	HIS	3.2
1	E	487	GLU	3.1
1	E	441	GLY	3.0
1	E	408	GLY	2.9
1	C	586	ARG	2.9
1	C	1	MET	2.9
1	E	501	CYS	2.8
1	A	441	GLY	2.8
1	D	358	TYR	2.8
1	E	591	GLY	2.8

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>	<b>RSRZ</b>
1	E	443	ASN	2.8
1	D	83	ASP	2.7
1	C	582	VAL	2.7
1	C	49	VAL	2.7
1	A	574	ASP	2.6
1	E	439	PRO	2.6
1	B	41	ALA	2.6
1	C	548	LEU	2.5
1	C	484	GLU	2.5
1	E	442	GLU	2.5
1	B	573	ALA	2.5
1	E	407	SER	2.5
1	C	43	GLY	2.5
1	E	490	LYS	2.4
1	B	275	SER	2.4
1	D	275	SER	2.4
1	E	473	VAL	2.3
1	E	274	GLN	2.3
1	A	1	MET	2.3
1	E	378	ARG	2.3
1	E	586	ARG	2.3
1	E	577	ALA	2.3
1	C	574	ASP	2.3
1	C	576	SER	2.3
1	C	471	ASP	2.3
1	A	440	HIS	2.2
1	E	551	PRO	2.2
1	C	46	GLY	2.2
1	B	574	ASP	2.2
1	C	571	ASP	2.1
1	A	443	ASN	2.1
1	E	152	GLY	2.1
1	E	484	GLU	2.1
1	E	578	ALA	2.1
1	D	45	ASP	2.1
1	E	326	ASN	2.1
1	E	530	ARG	2.1
1	E	358	TYR	2.1
1	D	573	ALA	2.0
1	E	64	VAL	2.0
1	E	409	LEU	2.0
1	C	544	ARG	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(Å <sup>2</sup> )	Q<0.9
2	GOL	B	602	6/6	0.76	0.33	72,77,81,82	0
2	GOL	B	604	6/6	0.77	0.33	81,85,89,91	0
2	GOL	B	605	6/6	0.81	0.35	82,89,91,92	0
2	GOL	A	601	6/6	0.83	0.25	61,74,79,80	0
5	SO4	E	606	5/5	0.84	0.29	103,104,106,123	0
5	SO4	B	610	5/5	0.86	0.38	91,95,100,114	0
2	GOL	B	601	6/6	0.87	0.21	64,68,74,76	0
2	GOL	D	602	6/6	0.87	0.21	77,80,81,82	0
2	GOL	E	603	6/6	0.88	0.49	84,91,93,94	0
2	GOL	E	601	6/6	0.88	0.21	81,83,87,89	0
5	SO4	D	606	5/5	0.88	0.23	112,116,121,134	0
2	GOL	E	602	6/6	0.88	0.27	77,79,81,87	0
2	GOL	A	602	6/6	0.90	0.25	71,72,75,79	0
5	SO4	D	605	5/5	0.90	0.27	101,104,104,116	0
2	GOL	C	601	6/6	0.90	0.23	66,71,78,78	0
5	SO4	A	605	5/5	0.90	0.23	90,90,95,105	0
2	GOL	C	602	6/6	0.91	0.29	81,82,87,88	0
5	SO4	D	607	5/5	0.91	0.33	112,112,123,129	0
5	SO4	B	609	5/5	0.91	0.22	79,84,88,106	0
4	AMP	E	605	23/23	0.92	0.35	84,92,96,99	0
2	GOL	D	601	6/6	0.92	0.26	64,70,76,77	0
6	MG	A	607	1/1	0.93	0.31	61,61,61,61	0
6	MG	B	611	1/1	0.93	0.38	61,61,61,61	0
6	MG	E	608	1/1	0.93	0.33	85,85,85,85	0
5	SO4	B	608	5/5	0.94	0.20	77,79,102,105	0
6	MG	D	609	1/1	0.94	0.25	61,61,61,61	0
2	GOL	B	603	6/6	0.94	0.25	68,72,75,79	0

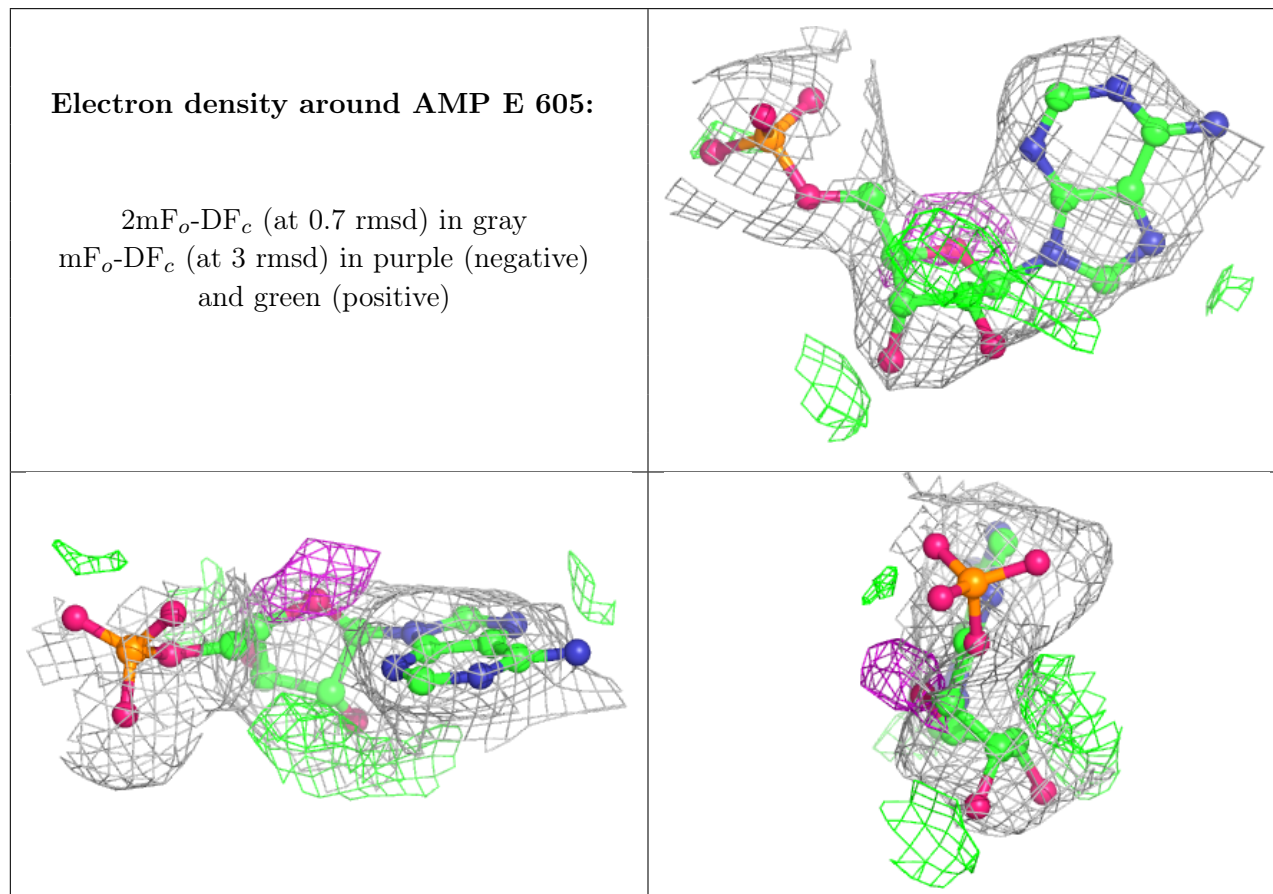
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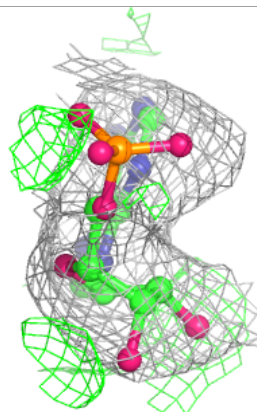
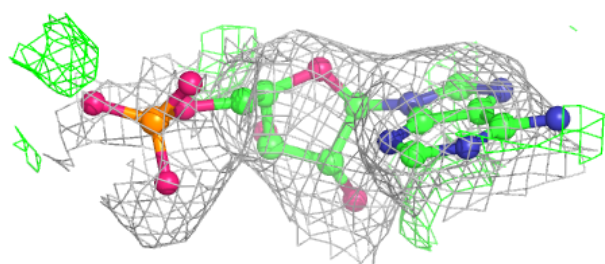
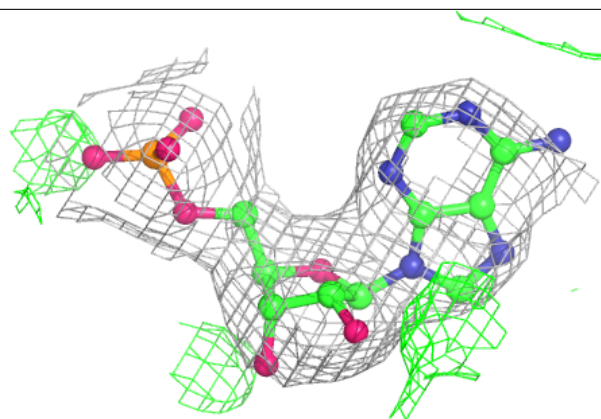
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
6	MG	E	607	1/1	0.95	0.33	77,77,77,77	0
6	MG	B	612	1/1	0.95	0.23	65,65,65,65	0
6	MG	D	608	1/1	0.96	0.41	62,62,62,62	0
4	AMP	A	604	23/23	0.96	0.31	64,74,77,77	0
6	MG	C	605	1/1	0.96	0.15	79,79,79,79	0
6	MG	C	606	1/1	0.96	0.32	71,71,71,71	0
4	AMP	B	607	23/23	0.97	0.28	61,65,69,70	0
4	AMP	C	604	23/23	0.97	0.24	77,81,86,89	0
6	MG	A	606	1/1	0.97	0.42	54,54,54,54	0
4	AMP	D	604	23/23	0.97	0.28	66,70,75,78	0
3	PPV	E	604	9/9	0.97	0.25	84,90,93,93	0
3	PPV	A	603	9/9	0.97	0.29	60,67,75,84	0
3	PPV	C	603	9/9	0.98	0.16	70,79,80,82	0
3	PPV	D	603	9/9	0.98	0.24	63,67,70,73	0
3	PPV	B	606	9/9	0.99	0.28	56,62,68,86	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.

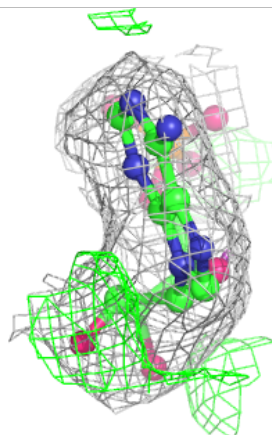
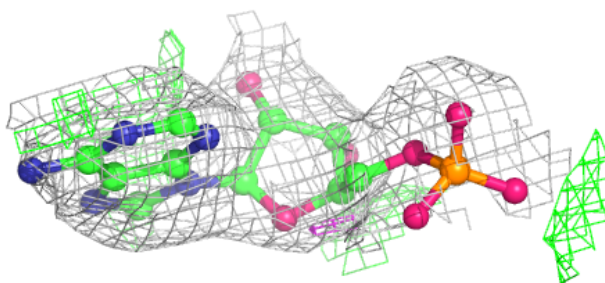
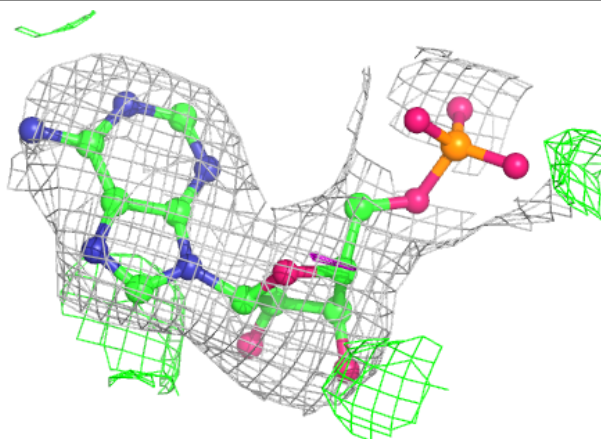


**Electron density around AMP A 604:**

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

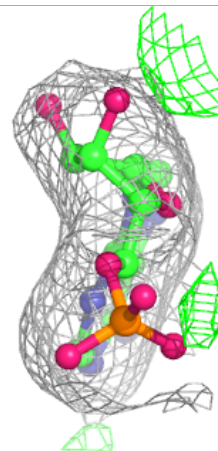
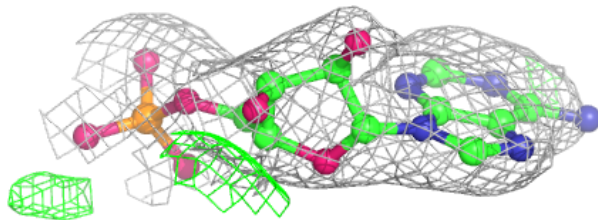
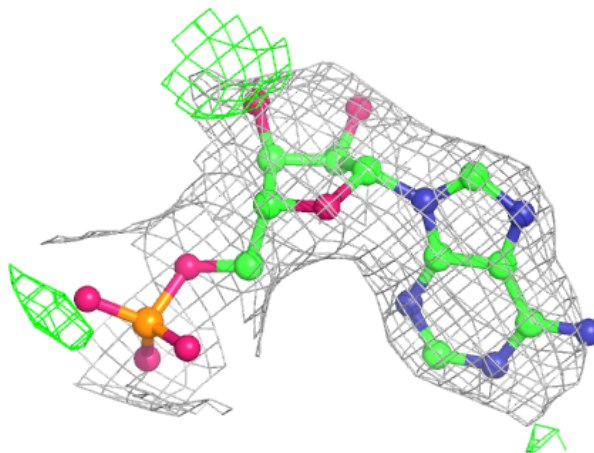
**Electron density around AMP B 607:**

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



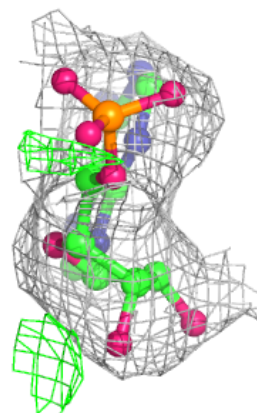
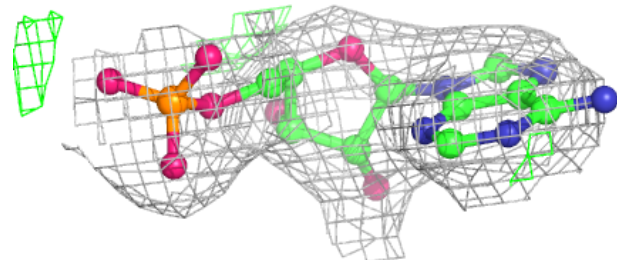
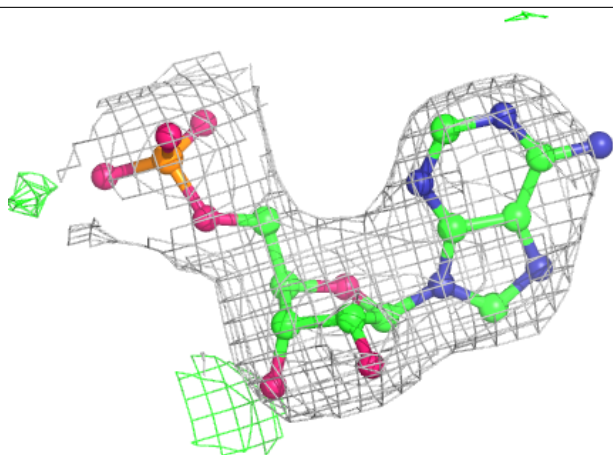
**Electron density around AMP C 604:**

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



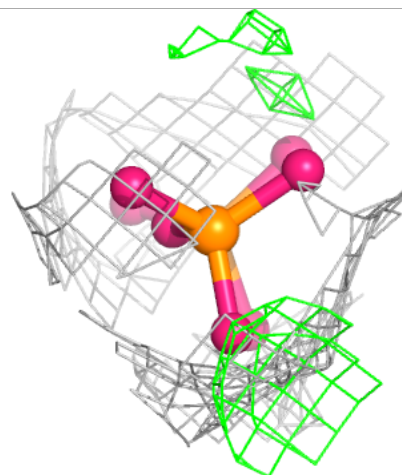
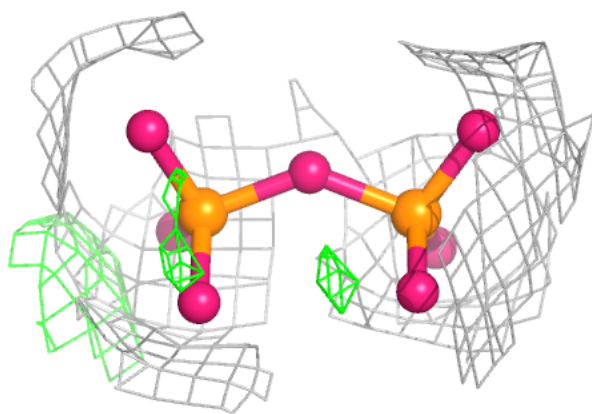
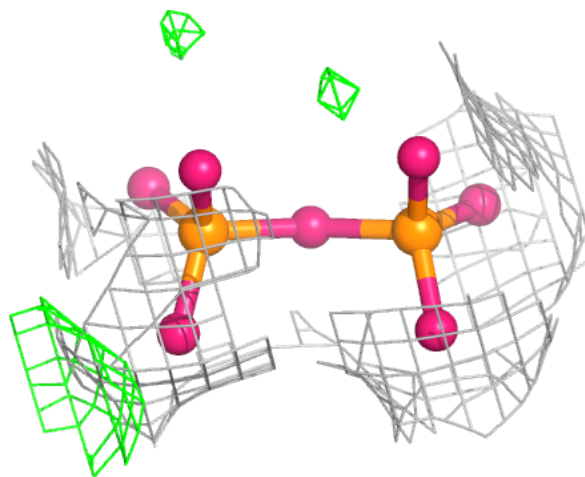
**Electron density around AMP D 604:**

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



**Electron density around PPV E 604:**

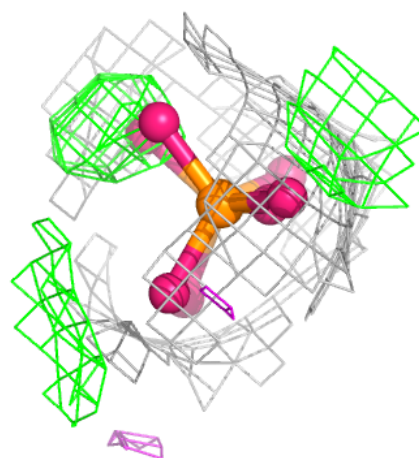
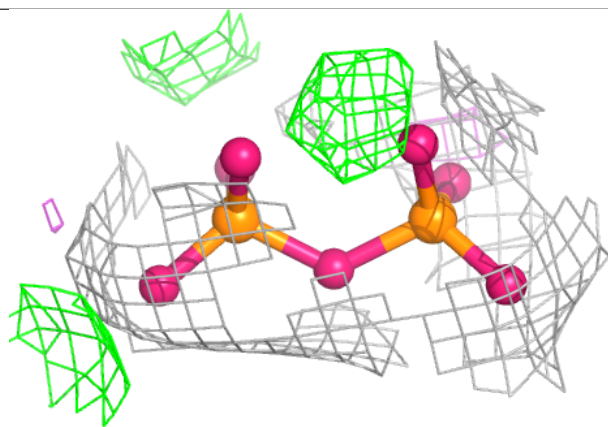
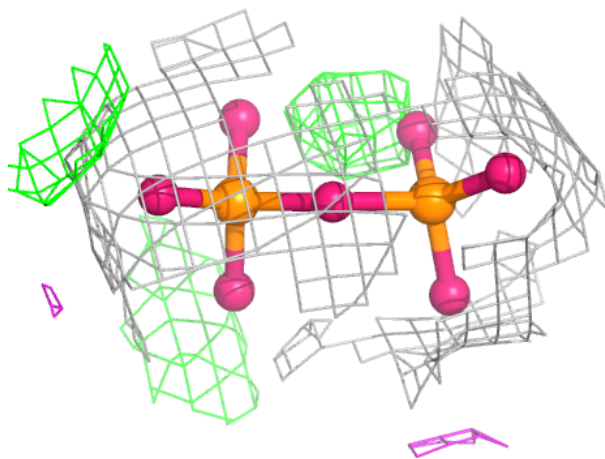
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)





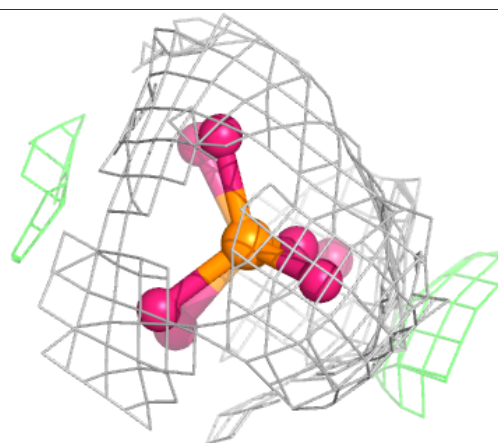
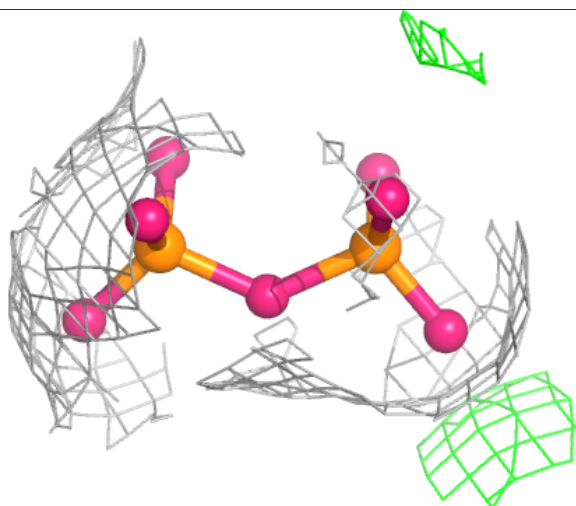
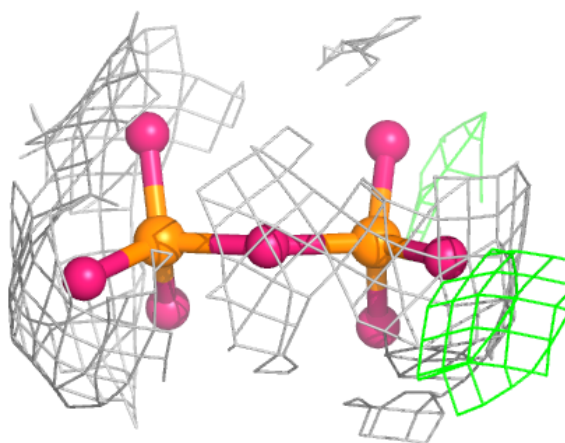
**Electron density around PPV A 603:**

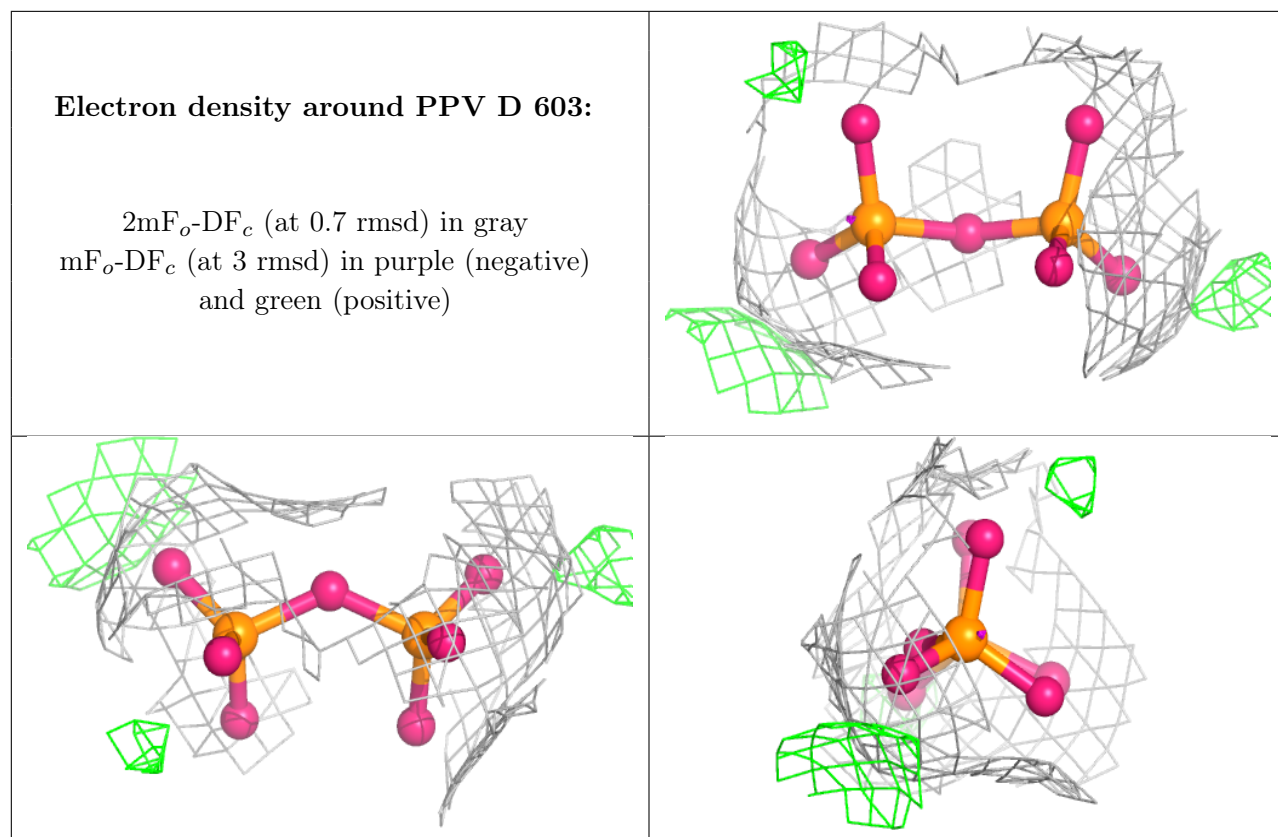
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



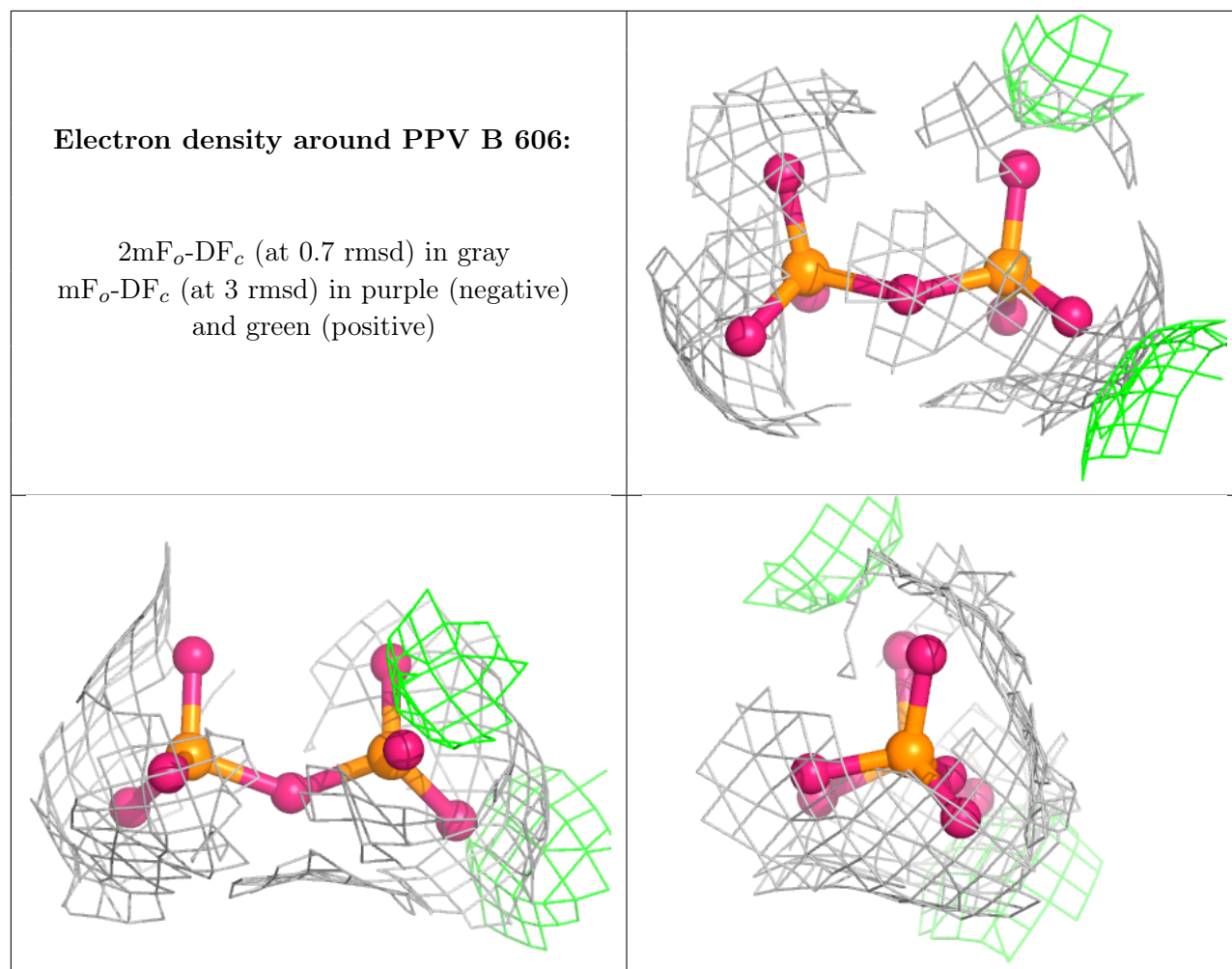
**Electron density around PPV C 603:**

$2mF_o-DF_c$  (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.