



Full wwPDB X-ray Structure Validation Report ⓘ

Oct 15, 2023 – 12:08 AM EDT

PDB ID : 8DH2
Title : T7 RNA polymerase elongation complex with unnatural base dDs-ATP mismatch
Authors : Oh, J.; Wang, D.
Deposited on : 2022-06-24
Resolution : 2.90 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.36
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) : 2.36

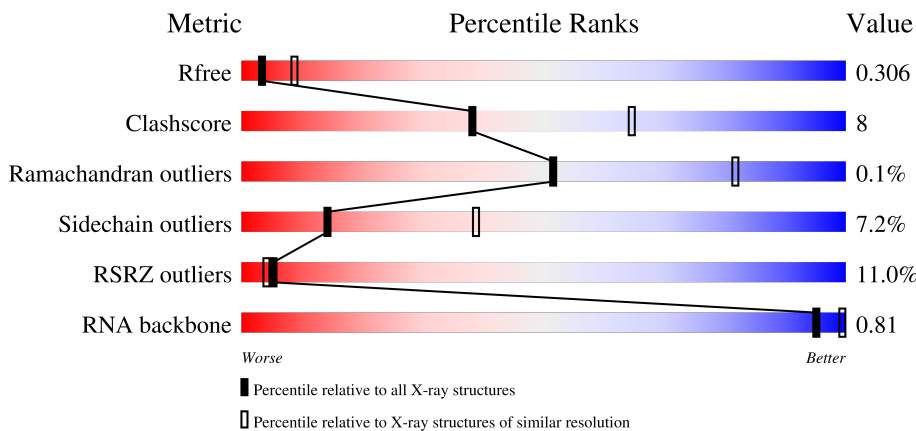
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 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}	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)
RNA backbone	3102	1007 (3.16-2.64)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. 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	B	883	<div style="display: flex; justify-content: space-between;"> <div style="text-align: right;">5%</div> <div style="width: 100%; height: 15px; background: linear-gradient(to right, red, orange, yellow, green, grey);"></div> <div style="text-align: left;">76%</div> <div style="text-align: right;">20%</div> </div>
1	E	883	<div style="display: flex; justify-content: space-between;"> <div style="text-align: right;">7%</div> <div style="width: 100%; height: 15px; background: linear-gradient(to right, red, orange, yellow, green, grey);"></div> <div style="text-align: left;">78%</div> <div style="text-align: right;">16%</div> </div>
1	I	883	<div style="display: flex; justify-content: space-between;"> <div style="text-align: right;">19%</div> <div style="width: 100%; height: 15px; background: linear-gradient(to right, red, orange, yellow, green, grey);"></div> <div style="text-align: left;">68%</div> <div style="text-align: right;">24%</div> </div>
1	L	883	<div style="display: flex; justify-content: space-between;"> <div style="text-align: right;">10%</div> <div style="width: 100%; height: 15px; background: linear-gradient(to right, red, orange, yellow, green, grey);"></div> <div style="text-align: left;">62%</div> <div style="text-align: right;">20%</div> </div>

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Mol	Chain	Length	Quality of chain
2	A	18	
2	F	18	
2	J	18	
2	M	18	
3	C	12	
3	G	12	
3	K	12	
3	N	12	
4	D	9	
4	H	9	
4	O	9	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
5	GOL	I	901	-	-	-	X

2 Entry composition [i](#)

There are 7 unique types of molecules in this entry. The entry contains 27806 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 T7 RNA polymerase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	B	856	Total 6706	C 4270	N 1165	O 1236	S 35	0	0	0
1	E	841	Total 6622	C 4222	N 1151	O 1214	S 35	0	0	0
1	I	833	Total 6518	C 4151	N 1124	O 1209	S 34	0	0	0
1	L	741	Total 5536	C 3517	N 967	O 1022	S 30	0	0	0

- Molecule 2 is a DNA chain called Template strand DNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace	
			Total	C	N	O	P				S
2	A	17	Total 351	C 170	N 67	O 97	P 16	S 1	0	0	0
2	F	17	Total 351	C 170	N 67	O 97	P 16	S 1	0	0	0
2	J	12	Total 248	C 120	N 45	O 70	P 12	S 1	0	0	0
2	M	14	Total 289	C 140	N 52	O 82	P 14	S 1	0	0	0

- Molecule 3 is a RNA chain called RNA.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace	
			Total	C	N	O				P
3	C	8	Total 173	C 77	N 33	O 55	P 8	0	0	0
3	G	8	Total 173	C 77	N 33	O 55	P 8	0	0	0
3	K	8	Total 173	C 77	N 33	O 55	P 8	0	0	0
3	N	8	Total 170	C 77	N 33	O 53	P 7	0	0	0

- Molecule 4 is a DNA chain called Non-template strand DNA.

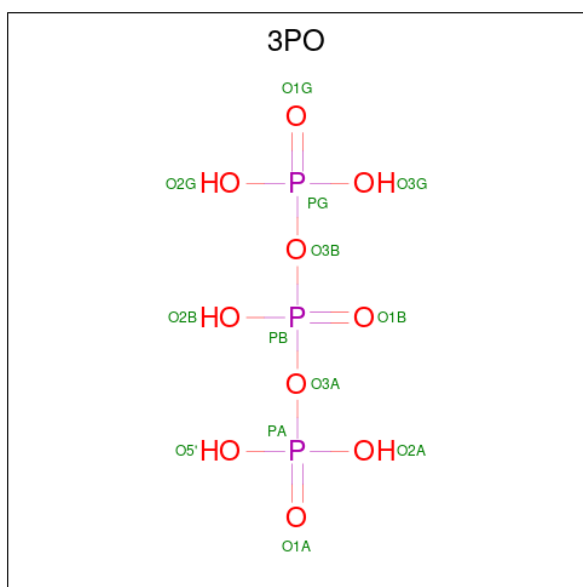
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
4	D	8	Total 160	C 77	N 25	O 50	P 8	0	0	0
4	H	8	Total 160	C 77	N 25	O 50	P 8	0	0	0
4	O	5	Total 102	C 49	N 17	O 31	P 5	0	0	0

- Molecule 5 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).



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

- Molecule 6 is TRIPHOSPHATE (three-letter code: 3PO) (formula: $H_5O_{10}P_3$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
6	B	1	Total	O	P	0	0
			13	10	3		
6	E	1	Total	O	P	0	0
			13	10	3		
6	I	1	Total	O	P	0	0
			13	10	3		
6	L	1	Total	O	P	0	0
			13	10	3		

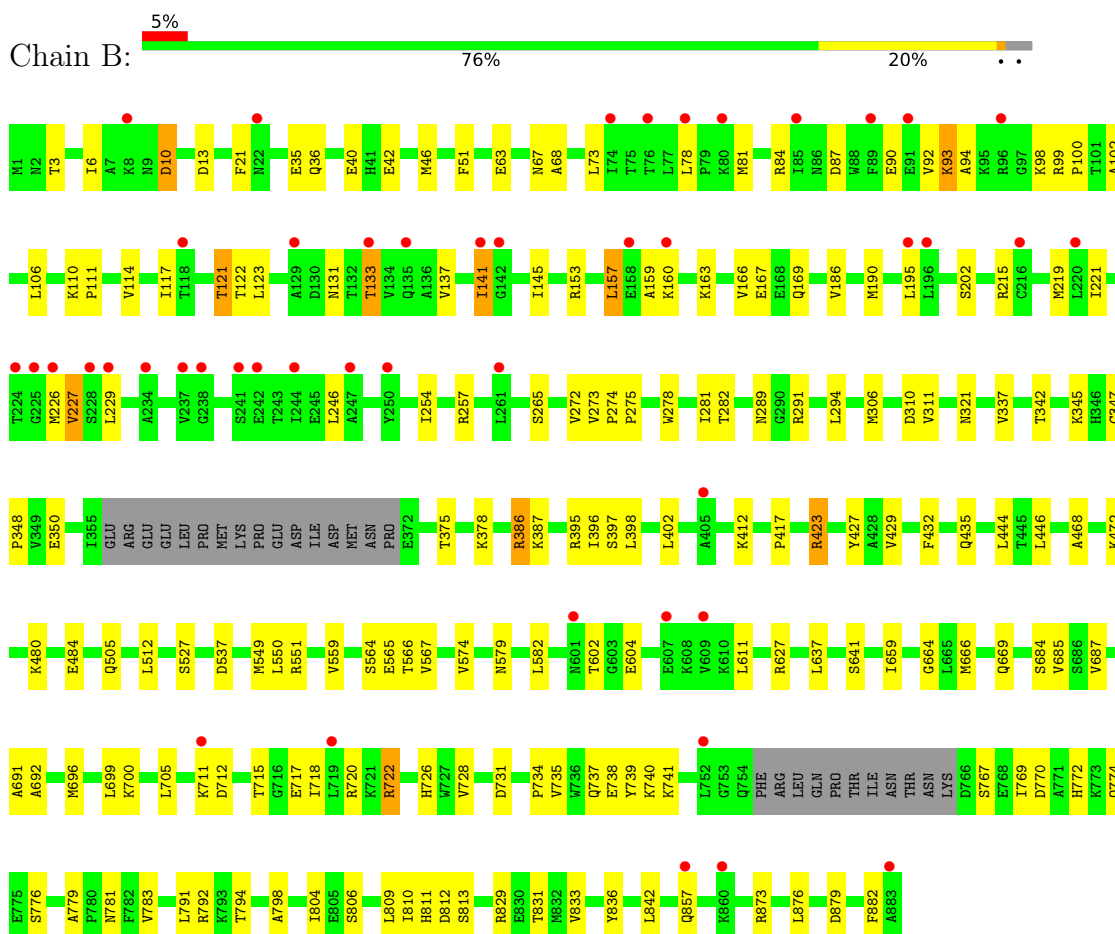
- Molecule 7 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	B	1	Total	Mg	0	0
			1	1		
7	E	1	Total	Mg	0	0
			1	1		
7	I	1	Total	Mg	0	0
			1	1		
7	L	1	Total	Mg	0	0
			1	1		

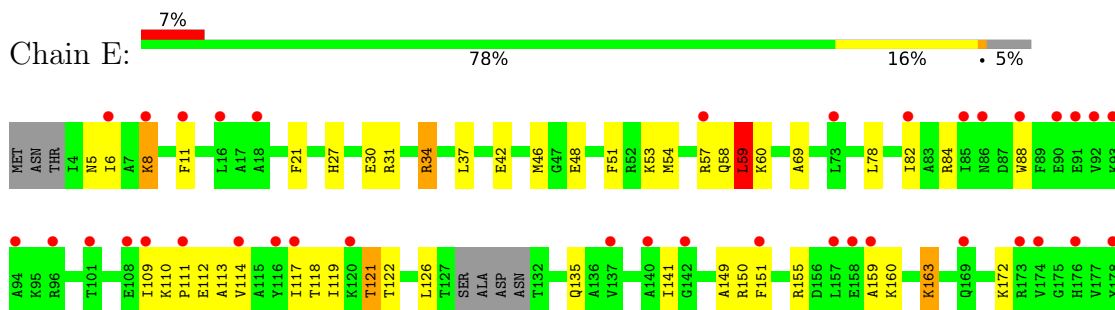
3 Residue-property plots [i](#)

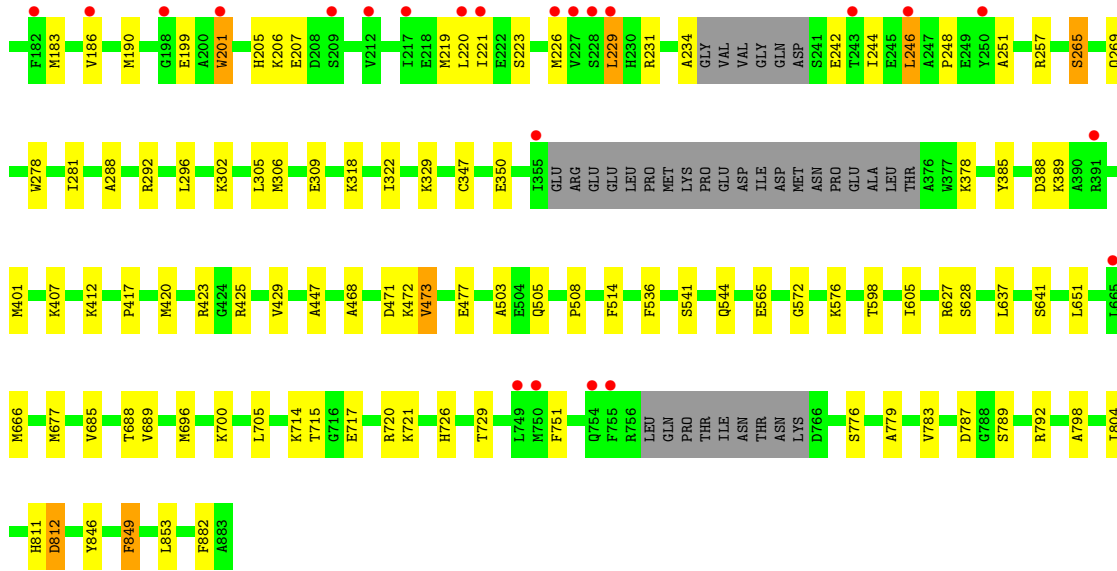
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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: T7 RNA polymerase

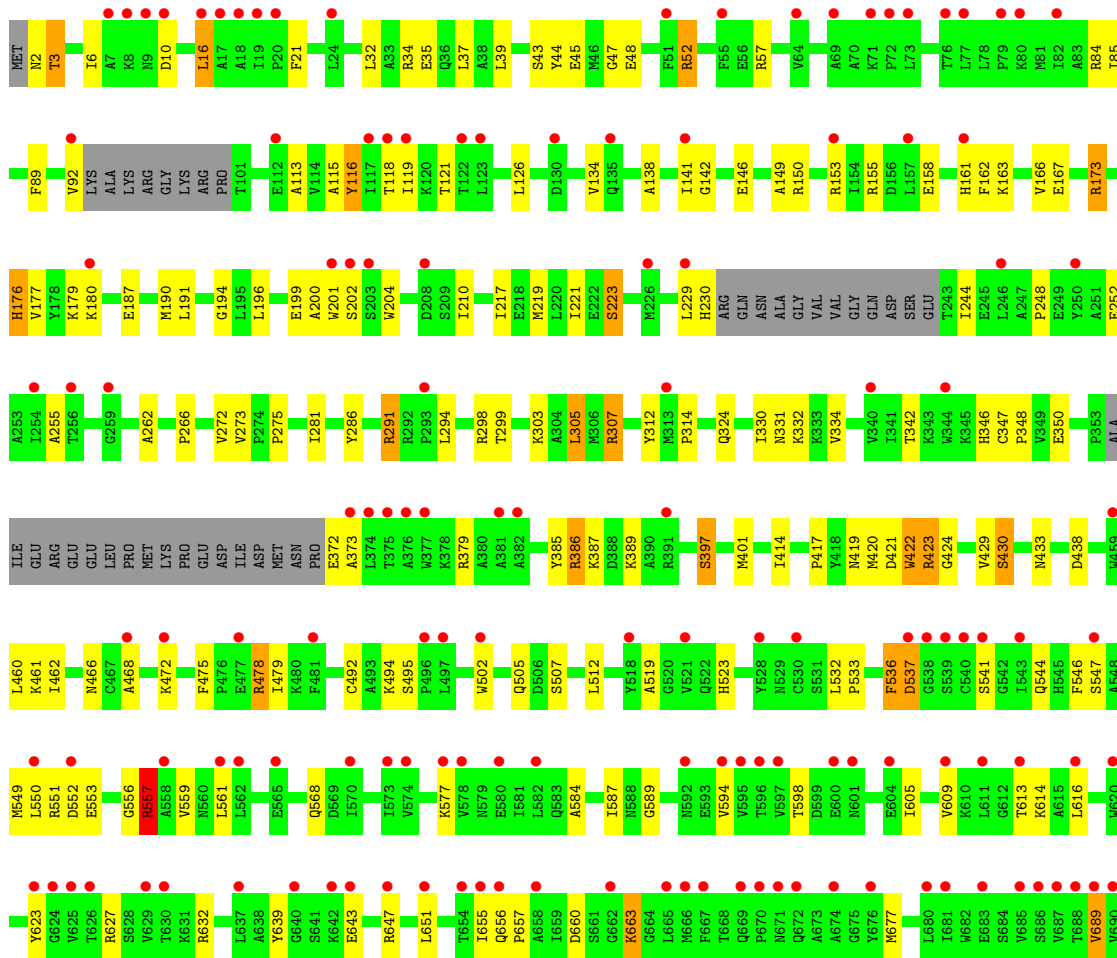


- Molecule 1: T7 RNA polymerase






• Molecule 1: T7 RNA polymerase

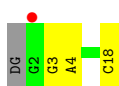


Chain A:  72% 22% 6%



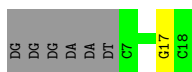
- Molecule 2: Template strand DNA

Chain F:  6% 78% 17% 6%



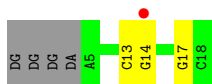
- Molecule 2: Template strand DNA

Chain J:  61% 6% 33%



- Molecule 2: Template strand DNA

Chain M:  6% 61% 17% 22%



- Molecule 3: RNA

Chain C:  8% 58% 8% 33%



- Molecule 3: RNA

Chain G:  67% 33%



- Molecule 3: RNA

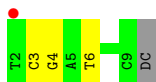
Chain K:  8% 58% 8% 33%



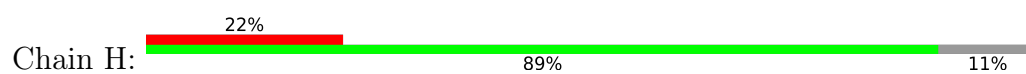
- Molecule 3: RNA



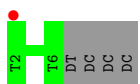
- Molecule 4: Non-template strand DNA



- Molecule 4: Non-template strand DNA



- Molecule 4: Non-template strand DNA



4 Data and refinement statistics

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α , β , γ	78.70Å 85.05Å 200.48Å 89.87° 85.38° 69.51°	Depositor
Resolution (Å)	47.37 – 2.90 47.37 – 2.90	Depositor EDS
% Data completeness (in resolution range)	98.0 (47.37-2.90) 98.0 (47.37-2.90)	Depositor EDS
R_{merge}	0.14	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.08 (at 2.91Å)	Xtrriage
Refinement program	PHENIX 1.19	Depositor
R, R_{free}	0.260 , 0.307 0.259 , 0.306	Depositor DCC
R_{free} test set	1978 reflections (1.88%)	wwPDB-VP
Wilson B-factor (Å ²)	77.5	Xtrriage
Anisotropy	0.342	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.28 , 68.6	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.92	EDS
Total number of atoms	27806	wwPDB-VP
Average B, all atoms (Å ²)	123.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.87% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical 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: 3PO, MG, 91N, GOL

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	B	0.28	0/6856	0.54	3/9277 (0.0%)
1	E	0.28	0/6770	0.56	4/9153 (0.0%)
1	I	0.31	0/6664	0.61	4/9020 (0.0%)
1	L	0.29	0/5653	0.57	7/7668 (0.1%)
2	A	0.53	0/365	0.83	0/559
2	F	0.51	0/365	0.84	0/559
2	J	0.53	0/248	0.85	0/377
2	M	0.50	0/294	0.89	0/448
3	C	0.20	0/193	0.80	0/299
3	G	0.19	0/193	0.74	0/299
3	K	0.16	0/193	0.71	0/299
3	N	0.21	0/190	0.78	0/295
4	D	0.55	0/177	1.07	0/270
4	H	0.52	0/177	0.98	0/270
4	O	0.56	0/113	1.03	0/172
All	All	0.31	0/28451	0.61	18/38965 (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	I	0	3

There are no bond length outliers.

All (18) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	I	714	LYS	CD-CE-NZ	-8.91	91.21	111.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	I	16	LEU	CA-CB-CG	7.96	133.60	115.30
1	I	870	LEU	CA-CB-CG	7.48	132.51	115.30
1	E	219	MET	CA-CB-CG	6.79	124.83	113.30
1	E	59	LEU	CA-CB-CG	6.77	130.87	115.30
1	B	78	LEU	CA-CB-CG	6.50	130.26	115.30
1	B	123	LEU	CA-CB-CG	6.21	129.58	115.30
1	L	858	LEU	CA-CB-CG	5.97	129.03	115.30
1	E	246	LEU	CA-CB-CG	5.86	128.78	115.30
1	I	45	GLU	OE1-CD-OE2	-5.62	116.56	123.30
1	L	812	ASP	CB-CG-OD2	5.57	123.31	118.30
1	L	73	LEU	CA-CB-CG	5.39	127.70	115.30
1	E	812	ASP	CB-CG-OD1	5.34	123.11	118.30
1	B	141	ILE	CG1-CB-CG2	-5.32	99.69	111.40
1	L	644	PHE	CB-CG-CD1	5.24	124.47	120.80
1	L	267	MET	CA-CB-CG	5.18	122.10	113.30
1	L	635	MET	CA-CB-CG	5.16	122.07	113.30
1	L	577	LYS	CB-CG-CD	5.14	124.98	111.60

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	I	557	ARG	Sidechain
1	I	777	GLY	Peptide
1	I	810	ILE	Peptide

5.2 Too-close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	B	6706	0	6650	89	0
1	E	6622	0	6583	75	0
1	I	6518	0	6414	132	0
1	L	5536	0	5251	110	0
2	A	351	0	180	3	0
2	F	351	0	180	2	0
2	J	248	0	123	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	M	289	0	146	2	0
3	C	173	0	86	1	0
3	G	173	0	86	0	0
3	K	173	0	86	1	0
3	N	170	0	87	0	0
4	D	160	0	92	2	0
4	H	160	0	92	0	0
4	O	102	0	58	0	0
5	B	6	0	8	0	0
5	C	6	0	8	0	0
5	I	6	0	8	0	0
6	B	13	0	0	0	0
6	E	13	0	0	2	0
6	I	13	0	0	0	0
6	L	13	0	0	0	0
7	B	1	0	0	0	0
7	E	1	0	0	0	0
7	I	1	0	0	0	0
7	L	1	0	0	0	0
All	All	27806	0	26138	411	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 8.

All (411) 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:278:TRP:H	1:B:321:ASN:HD21	1.19	0.87
1:I:155:ARG:HA	1:I:163:LYS:HD3	1.67	0.77
1:B:6:ILE:HB	1:B:291:ARG:HH22	1.51	0.75
1:I:468:ALA:HA	1:I:505:GLN:HG3	1.69	0.75
1:B:602:THR:HG23	1:B:604:GLU:H	1.53	0.74
1:L:46:MET:HB2	1:L:267:MET:HG3	1.71	0.72
1:L:68:ALA:HA	1:L:71:LYS:HG3	1.73	0.71
1:E:111:PRO:HA	1:E:114:VAL:HB	1.72	0.70
1:I:200:ALA:O	1:I:204:TRP:NE1	2.21	0.68
1:L:264:ILE:HG22	1:L:291:ARG:HD2	1.76	0.67
1:I:430:SER:O	1:I:433:ASN:ND2	2.27	0.67
1:I:16:LEU:HD23	1:I:37:LEU:HD21	1.76	0.67
1:B:84:ARG:HA	1:B:87:ASP:HB2	1.78	0.66
1:B:90:GLU:HA	1:B:93:LYS:HD2	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:715:THR:HG23	1:B:717:GLU:H	1.61	0.65
1:B:92:VAL:HG11	1:B:100:PRO:HD3	1.78	0.65
1:B:35:GLU:HG2	1:B:272:VAL:HG21	1.79	0.65
1:L:552:ASP:HB2	1:L:691:ALA:HB2	1.79	0.64
1:L:50:ARG:HA	1:L:53:LYS:HE2	1.79	0.64
1:I:552:ASP:HB2	1:I:691:ALA:HB3	1.79	0.64
1:L:495:SER:HB3	1:L:498:GLU:HB2	1.79	0.64
1:L:706:LEU:HD11	1:L:849:PHE:HB2	1.80	0.64
1:E:126:LEU:HD21	1:E:244:ILE:HG23	1.80	0.63
1:L:571:TYR:HE1	1:L:634:VAL:HB	1.64	0.63
1:E:82:ILE:HG12	1:E:112:GLU:HA	1.81	0.62
1:L:40:GLU:HG2	1:L:286:TYR:HD2	1.64	0.62
1:I:837:GLU:HG3	1:I:872:LEU:HD22	1.81	0.62
1:I:386:ARG:HD2	3:K:4:G:H5''	1.81	0.62
1:E:126:LEU:HD13	1:E:246:LEU:HB2	1.82	0.62
1:I:705:LEU:O	1:I:720:ARG:NH2	2.32	0.62
1:L:560:ASN:HD21	1:L:568:GLN:H	1.48	0.62
1:I:16:LEU:H	1:I:37:LEU:HD11	1.64	0.62
1:I:810:ILE:HD11	1:I:813:SER:HB3	1.82	0.62
1:L:347:CYS:HB2	1:L:350:GLU:HB2	1.82	0.61
1:E:425:ARG:NH1	1:E:787:ASP:OD2	2.33	0.61
1:I:275:PRO:HG2	1:I:324:GLN:HB3	1.83	0.61
1:I:422:TRP:CD1	1:I:423:ARG:HD3	2.36	0.60
1:E:69:ALA:HA	1:E:257:ARG:HG2	1.83	0.60
1:I:559:VAL:HG23	1:I:561:LEU:HG	1.84	0.60
1:B:342:THR:HG22	1:B:348:PRO:HG3	1.81	0.60
1:B:565:GLU:HG2	1:B:566:THR:HG22	1.84	0.60
1:L:48:GLU:HG2	1:L:262:ALA:HB1	1.84	0.60
1:I:294:LEU:HD11	1:I:429:VAL:HG11	1.84	0.60
1:L:57:ARG:HH12	2:M:17:DG:H5''	1.64	0.60
1:B:726:HIS:ND1	1:B:735:VAL:O	2.34	0.59
1:E:347:CYS:HB3	1:E:350:GLU:HB2	1.84	0.59
1:I:594:VAL:HA	1:I:609:VAL:HA	1.83	0.59
1:B:611:LEU:HD11	1:B:669:GLN:HG3	1.83	0.59
1:L:383:ALA:O	1:L:386:ARG:NH1	2.36	0.59
1:B:227:VAL:HG12	1:B:246:LEU:HA	1.85	0.59
1:I:598:THR:HA	1:I:605:ILE:HA	1.85	0.58
1:B:712:ASP:HB3	1:B:715:THR:HG22	1.85	0.58
1:E:417:PRO:HG2	1:E:429:VAL:HB	1.84	0.58
1:L:71:LYS:HA	1:L:74:ILE:HB	1.85	0.58
1:L:5:ASN:HB2	1:L:52:ARG:HE	1.67	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L:715:THR:HG23	1:L:717:GLU:H	1.67	0.58
1:L:706:LEU:HD12	1:L:725:VAL:HG12	1.85	0.58
1:B:468:ALA:HA	1:B:505:GLN:HB3	1.86	0.58
1:L:724:ALA:HB2	1:L:738:GLU:HG3	1.85	0.57
1:E:110:LYS:HE2	1:E:111:PRO:HD2	1.87	0.57
1:B:221:ILE:HD13	1:B:229:LEU:HB3	1.87	0.57
1:E:536:PHE:HB3	1:E:882:PHE:HB3	1.87	0.57
1:I:553:GLU:O	1:I:557:ARG:NH1	2.38	0.57
1:B:722:ARG:HB3	1:B:769:ILE:HD12	1.86	0.57
1:E:627:ARG:NH2	6:E:901:3PO:O1A	2.37	0.57
1:L:435:GLN:HA	1:L:810:ILE:HD11	1.87	0.56
1:I:219:MET:O	1:I:223:SER:OG	2.21	0.56
1:L:808:ALA:HB3	1:L:815:GLY:HA3	1.85	0.56
1:B:810:ILE:O	1:B:812:ASP:N	2.39	0.56
1:E:503:ALA:HA	1:E:508:PRO:HB3	1.87	0.56
1:I:826:LYS:HA	1:I:829:ARG:HH11	1.69	0.56
1:L:561:LEU:HB2	1:L:875:ILE:HD12	1.86	0.56
1:B:731:ASP:HB3	1:B:792:ARG:HH21	1.71	0.56
1:L:543:ILE:HD12	1:L:689:VAL:HG11	1.87	0.56
1:B:423:ARG:NH1	1:B:781:ASN:OD1	2.39	0.56
1:B:737:GLN:HE21	1:B:739:TYR:HE2	1.54	0.56
1:E:118:THR:HA	1:E:141:ILE:HD12	1.88	0.56
1:I:715:THR:HB	1:I:717:GLU:HG2	1.89	0.55
1:L:705:LEU:O	1:L:720:ARG:NH2	2.31	0.55
1:B:737:GLN:O	1:B:774:GLN:NE2	2.39	0.55
1:B:738:GLU:HA	1:B:774:GLN:HE22	1.71	0.55
1:I:47:GLY:HA3	1:I:266:PRO:HA	1.88	0.55
1:I:544:GLN:HE22	1:I:881:ALA:HB1	1.70	0.55
1:L:264:ILE:HG13	1:L:292:ARG:NH2	2.21	0.55
1:I:190:MET:O	1:I:194:GLY:N	2.39	0.55
1:B:740:LYS:HD3	1:B:767:SER:HB2	1.88	0.55
1:I:728:VAL:HA	1:I:734:PRO:HA	1.89	0.55
1:E:205:HIS:ND1	1:E:207:GLU:OE1	2.34	0.55
1:E:598:THR:HG22	1:E:605:ILE:HG12	1.88	0.55
1:L:342:THR:HG22	1:L:348:PRO:HG3	1.89	0.55
1:B:117:ILE:O	1:B:121:THR:OG1	2.23	0.55
1:I:547:SER:HA	1:I:552:ASP:HB3	1.89	0.55
1:I:706:LEU:HD22	1:I:725:VAL:HG12	1.89	0.55
1:I:173:ARG:O	1:I:179:LYS:NZ	2.40	0.55
1:I:44:TYR:HA	1:I:266:PRO:HB3	1.89	0.55
1:L:286:TYR:CE1	1:L:417:PRO:HG3	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:278:TRP:H	1:B:321:ASN:ND2	1.97	0.54
1:B:720:ARG:HH21	1:B:857:GLN:HE22	1.56	0.54
1:I:149:ALA:HB1	1:I:201:TRP:HZ3	1.71	0.54
1:E:57:ARG:NH1	2:F:18:DC:OP2	2.41	0.54
1:I:150:ARG:HD2	1:I:201:TRP:HB2	1.89	0.54
1:B:342:THR:O	1:B:395:ARG:NH2	2.41	0.54
1:I:32:LEU:HB3	1:I:273:VAL:HG12	1.90	0.54
1:I:379:ARG:HH21	1:I:656:GLN:HG3	1.72	0.54
1:L:579:ASN:HB2	1:L:625:VAL:HG21	1.90	0.54
1:I:3:THR:HA	1:I:255:ALA:HB1	1.88	0.54
1:I:150:ARG:NE	1:I:187:GLU:OE2	2.42	0.53
1:L:817:ILE:HG13	1:L:820:ASP:HB2	1.88	0.53
1:L:536:PHE:HB3	1:L:882:PHE:HB3	1.90	0.53
1:E:265:SER:O	1:E:265:SER:OG	2.26	0.53
1:I:150:ARG:NH2	1:I:187:GLU:OE1	2.42	0.53
1:L:334:VAL:HG12	1:L:443:LEU:HD23	1.91	0.53
1:I:201:TRP:HA	1:I:204:TRP:NE1	2.24	0.53
1:L:345:LYS:NZ	1:L:351:ASP:O	2.39	0.53
1:B:659:ILE:HG13	1:B:664:GLY:HA3	1.91	0.52
1:L:571:TYR:CE1	1:L:634:VAL:HB	2.45	0.52
1:E:420:MET:HE1	1:E:792:ARG:HD3	1.91	0.52
1:L:123:LEU:O	1:L:127:THR:OG1	2.26	0.52
1:I:163:LYS:HA	1:I:166:VAL:HG12	1.92	0.52
1:I:584:ALA:HA	1:I:587:ILE:HD12	1.92	0.52
1:B:10:ASP:HB2	1:B:291:ARG:HH21	1.74	0.52
1:I:855:GLU:HA	1:I:858:LEU:HD12	1.92	0.52
1:B:699:LEU:HD12	1:B:779:ALA:HA	1.90	0.52
1:B:281:ILE:HG22	1:B:282:THR:HG23	1.91	0.51
1:E:468:ALA:HA	1:E:505:GLN:HB3	1.91	0.51
1:L:298:ARG:HH12	1:L:427:TYR:HB2	1.75	0.51
1:L:59:LEU:HD22	1:L:127:THR:HG21	1.91	0.51
1:L:286:TYR:HE1	1:L:417:PRO:HG3	1.74	0.51
1:B:93:LYS:HD3	1:B:94:ALA:N	2.26	0.51
2:A:5:DA:H61	4:D:6:DT:H3	1.58	0.51
1:L:275:PRO:HG2	1:L:324:GLN:HB3	1.93	0.51
1:E:221:ILE:HA	1:E:226:MET:HB3	1.93	0.51
1:I:689:VAL:HB	1:I:692:ALA:HB3	1.92	0.51
1:I:720:ARG:NH1	1:I:721:LYS:O	2.44	0.51
1:L:725:VAL:HG21	1:L:778:ILE:HD13	1.93	0.51
1:E:798:ALA:HB1	1:E:804:ILE:HD13	1.92	0.51
1:L:304:ALA:HA	1:L:307:ARG:HD2	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:342:THR:HG22	1:I:348:PRO:HG3	1.93	0.51
1:L:517:GLU:HG3	1:L:532:LEU:HB2	1.93	0.51
1:I:519:ALA:O	1:I:523:HIS:ND1	2.44	0.50
1:I:89:PHE:HA	1:I:92:VAL:HB	1.93	0.50
1:I:286:TYR:CE1	1:I:417:PRO:HG3	2.46	0.50
1:B:84:ARG:HG3	1:B:219:MET:HB3	1.94	0.50
1:B:347:CYS:HB3	1:B:350:GLU:HB2	1.93	0.50
1:E:229:LEU:HB2	1:E:242:GLU:HG2	1.93	0.50
1:I:229:LEU:H	1:I:229:LEU:HD23	1.77	0.50
1:B:791:LEU:HD21	1:B:809:LEU:HD13	1.94	0.50
1:I:549:MET:O	1:I:551:ARG:NH1	2.45	0.50
1:B:110:LYS:HD2	1:B:111:PRO:HD2	1.93	0.50
1:I:420:MET:HE1	1:I:792:ARG:HH11	1.76	0.50
1:L:462:ILE:O	1:L:466:ASN:N	2.42	0.49
1:I:6:ILE:HD11	1:I:291:ARG:HH11	1.77	0.49
1:I:347:CYS:HB2	1:I:350:GLU:HB2	1.94	0.49
1:I:10:ASP:O	1:I:291:ARG:NH2	2.45	0.49
1:I:536:PHE:HZ	1:I:821:ALA:HB1	1.77	0.49
1:E:696:MET:HG2	1:E:779:ALA:HB1	1.94	0.49
1:L:660:ASP:OD1	1:L:660:ASP:N	2.45	0.49
1:E:688:THR:HG22	1:E:689:VAL:HG13	1.94	0.49
1:L:417:PRO:HG2	1:L:429:VAL:HB	1.95	0.49
1:B:798:ALA:HB1	1:B:804:ILE:HD12	1.93	0.49
1:E:59:LEU:HD12	1:E:60:LYS:HG3	1.93	0.49
1:E:109:ILE:HD11	1:E:149:ALA:HA	1.95	0.49
1:E:472:LYS:NZ	6:E:901:3PO:O2A	2.42	0.49
1:I:537:ASP:HB3	1:I:813:SER:HB2	1.95	0.49
1:L:58:GLN:HG2	1:L:63:GLU:HB2	1.95	0.49
1:I:176:HIS:HD2	1:I:177:VAL:HG13	1.78	0.48
1:I:873:ARG:HD3	1:I:876:LEU:HD12	1.94	0.48
1:B:190:MET:HB3	1:B:195:LEU:HB2	1.95	0.48
1:I:299:THR:HG21	1:I:305:LEU:HG	1.95	0.48
1:L:462:ILE:HG23	1:L:478:ARG:HD3	1.95	0.48
1:L:566:THR:O	1:L:568:GLN:NE2	2.46	0.48
1:L:651:LEU:HA	1:L:655:ILE:HB	1.94	0.48
1:I:623:TYR:HE1	1:I:663:LYS:HB3	1.78	0.48
1:E:155:ARG:O	1:E:160:LYS:HD3	2.13	0.48
1:L:696:MET:O	1:L:700:LYS:HG3	2.13	0.48
1:I:298:ARG:NH2	1:I:419:ASN:OD1	2.46	0.48
1:L:11:PHE:HE2	1:L:48:GLU:HG3	1.79	0.48
1:L:731:ASP:OD2	1:L:792:ARG:NH1	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:311:VAL:HG21	1:B:734:PRO:HG3	1.96	0.48
1:L:335:LEU:O	1:L:339:ASN:ND2	2.42	0.48
1:E:151:PHE:CD1	1:E:183:MET:HB3	2.49	0.48
1:I:199:GLU:HB3	1:I:202:SER:HB2	1.95	0.48
1:B:417:PRO:HG2	1:B:429:VAL:HB	1.96	0.48
1:B:427:TYR:HA	1:B:435:GLN:HE22	1.79	0.48
1:E:118:THR:OG1	1:E:119:ILE:N	2.47	0.48
1:E:246:LEU:HD12	1:E:251:ALA:HB2	1.96	0.48
1:I:553:GLU:OE1	1:I:557:ARG:NH2	2.46	0.47
1:L:30:GLU:OE1	1:L:34:ARG:NH1	2.47	0.47
1:B:67:ASN:OD1	1:B:68:ALA:N	2.46	0.47
1:B:794:THR:HA	1:B:831:THR:HG21	1.96	0.47
1:E:541:SER:HA	1:E:544:GLN:HB2	1.97	0.47
1:B:141:ILE:O	1:B:145:ILE:HG12	2.15	0.47
1:B:387:LYS:HE2	1:B:387:LYS:HB3	1.80	0.47
1:I:461:LYS:HD2	1:I:479:ILE:HG23	1.95	0.47
1:B:705:LEU:O	1:B:720:ARG:NH2	2.48	0.47
1:E:705:LEU:O	1:E:720:ARG:NH2	2.46	0.47
1:I:826:LYS:O	1:I:830:GLU:HG2	2.15	0.47
1:B:42:GLU:O	1:B:46:MET:HG3	2.13	0.47
1:L:11:PHE:CE1	1:L:44:TYR:HB3	2.50	0.47
1:B:163:LYS:HA	1:B:166:VAL:HG22	1.96	0.47
1:B:386:ARG:NH1	3:C:4:G:OP1	2.47	0.47
1:B:741:LYS:HD2	1:B:770:ASP:HA	1.96	0.47
1:E:5:ASN:OD1	1:E:5:ASN:N	2.43	0.47
1:E:159:ALA:O	1:E:163:LYS:N	2.47	0.47
1:I:804:ILE:HG12	1:I:820:ASP:HB3	1.96	0.47
1:I:826:LYS:HA	1:I:829:ARG:NH1	2.30	0.47
1:L:342:THR:HG21	1:L:402:LEU:HD11	1.97	0.47
1:L:560:ASN:HD21	1:L:567:VAL:HA	1.80	0.47
1:E:117:ILE:O	1:E:121:THR:OG1	2.24	0.47
1:I:740:LYS:HD2	1:I:740:LYS:HA	1.73	0.47
1:L:485:ASN:O	1:L:489:ILE:HG13	2.15	0.47
1:L:276:LYS:HE2	1:L:287:TRP:HA	1.96	0.47
1:E:42:GLU:O	1:E:46:MET:HG3	2.15	0.47
1:I:557:ARG:H	1:I:557:ARG:HH11	1.63	0.47
1:I:816:THR:HG22	1:I:824:LEU:HD22	1.95	0.47
1:L:44:TYR:HE1	1:L:291:ARG:H	1.62	0.47
1:I:163:LYS:NZ	1:I:167:GLU:HG2	2.30	0.46
1:E:186:VAL:O	1:E:190:MET:HG2	2.16	0.46
1:E:846:TYR:HA	1:E:849:PHE:HE2	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:286:TYR:HE1	1:I:417:PRO:HG3	1.79	0.46
1:I:312:TYR:CZ	1:I:314:PRO:HG3	2.50	0.46
1:I:502:TRP:CG	1:I:512:LEU:HD13	2.51	0.46
1:L:524:HIS:HB2	1:L:528:TYR:HB2	1.97	0.46
1:B:446:LEU:HD13	1:B:806:SER:HB3	1.97	0.46
1:I:589:GLY:HA3	1:I:614:LYS:HB2	1.97	0.46
1:L:711:LYS:HZ3	1:L:716:GLY:HA2	1.81	0.46
1:B:692:ALA:O	1:B:696:MET:HG3	2.16	0.46
1:L:31:ARG:HA	1:L:34:ARG:HD3	1.97	0.46
1:L:475:PHE:HA	1:L:478:ARG:HD2	1.98	0.46
1:B:551:ARG:NH2	1:B:836:TYR:O	2.48	0.46
1:B:711:LYS:HB3	1:B:718:ILE:HA	1.98	0.46
1:E:231:ARG:HA	1:E:242:GLU:HA	1.97	0.46
1:L:264:ILE:HG22	1:L:291:ARG:CD	2.46	0.46
1:E:231:ARG:HG2	1:E:234:ALA:HB2	1.98	0.45
1:E:329:LYS:HD3	1:E:447:ALA:HA	1.98	0.45
1:B:566:THR:OG1	1:B:567:VAL:N	2.49	0.45
1:L:430:SER:OG	1:L:432:PHE:O	2.32	0.45
2:A:13:DC:H2'	2:A:14:DG:C8	2.51	0.45
1:E:715:THR:HG23	1:E:717:GLU:H	1.82	0.45
1:I:577:LYS:HA	1:I:577:LYS:HD3	1.83	0.45
1:L:348:PRO:HD3	1:L:398:LEU:HD21	1.97	0.45
1:I:115:ALA:O	1:I:119:ILE:HG13	2.16	0.45
1:I:298:ARG:HB2	1:I:421:ASP:HA	1.98	0.45
1:I:657:PRO:HA	1:I:660:ASP:HB2	1.98	0.45
1:E:473:VAL:HG13	1:E:477:GLU:HB2	1.97	0.45
2:F:3:DG:H2''	2:F:4:DA:C8	2.51	0.45
1:I:3:THR:HG21	1:I:52:ARG:HD2	1.99	0.45
1:I:556:GLY:O	1:I:561:LEU:N	2.49	0.45
1:I:816:THR:OG1	1:I:817:ILE:N	2.47	0.45
1:B:36:GLN:NE2	1:B:40:GLU:OE2	2.42	0.45
1:I:462:ILE:HD13	1:I:478:ARG:HD2	1.99	0.45
1:I:613:THR:HA	1:I:616:LEU:HB2	1.99	0.45
1:L:330:ILE:HD13	1:L:409:ALA:HA	1.98	0.45
1:L:471:ASP:O	1:L:478:ARG:NH2	2.50	0.45
1:L:264:ILE:HG13	1:L:292:ARG:HH21	1.81	0.45
1:I:191:LEU:HD23	1:I:191:LEU:HA	1.82	0.45
1:L:577:LYS:HG3	1:L:684:SER:HB3	1.99	0.45
1:B:574:VAL:HG13	1:B:684:SER:HB2	1.99	0.45
1:E:378:LYS:H	1:E:378:LYS:HG2	1.62	0.45
1:I:134:VAL:HG12	1:I:244:ILE:HB	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:550:LEU:O	1:I:868:GLY:N	2.50	0.45
1:B:550:LEU:HD21	1:B:842:LEU:HD12	1.97	0.44
1:E:118:THR:O	1:E:122:THR:HG23	2.17	0.44
4:D:3:DC:H2''	4:D:4:DG:H5''	1.98	0.44
1:I:651:LEU:HD23	1:I:655:ILE:HD12	2.00	0.44
1:B:412:LYS:HB3	1:B:412:LYS:HE3	1.71	0.44
1:I:639:TYR:HA	1:I:780:PRO:HG3	2.00	0.44
1:I:691:ALA:HA	1:I:694:GLU:HB2	1.99	0.44
1:L:705:LEU:HD13	1:L:857:GLN:HB3	2.00	0.44
1:B:722:ARG:HG2	1:B:769:ILE:HB	1.99	0.44
1:I:557:ARG:HH11	1:I:557:ARG:N	2.15	0.44
1:I:734:PRO:HB2	1:I:736:TRP:CZ3	2.53	0.44
1:L:317:TYR:O	1:L:321:ASN:ND2	2.50	0.44
1:B:186:VAL:O	1:B:190:MET:HG3	2.17	0.44
1:E:318:LYS:O	1:E:322:ILE:HG13	2.17	0.44
1:L:545:HIS:HE1	1:L:787:ASP:HA	1.83	0.44
1:I:113:ALA:O	1:I:116:TYR:N	2.49	0.44
1:I:541:SER:HA	1:I:544:GLN:HB2	1.98	0.44
1:L:560:ASN:ND2	1:L:568:GLN:H	2.16	0.44
2:M:13:DC:H2'	2:M:14:DG:C8	2.52	0.44
1:I:217:ILE:O	1:I:221:ILE:HD12	2.18	0.44
1:B:141:ILE:HD12	1:B:141:ILE:H	1.82	0.44
1:I:557:ARG:HB3	1:I:568:GLN:HE22	1.82	0.44
1:I:879:ASP:OD1	1:I:879:ASP:N	2.51	0.44
1:B:294:LEU:HD21	1:B:429:VAL:HG11	2.00	0.44
1:B:537:ASP:H	1:B:882:PHE:HD2	1.66	0.44
1:E:84:ARG:HH21	1:E:223:SER:HA	1.83	0.44
1:L:537:ASP:OD1	1:L:537:ASP:N	2.50	0.44
1:E:637:LEU:HD13	1:E:685:VAL:HG11	2.00	0.43
1:I:372:GLU:HB3	1:I:373:ALA:H	1.70	0.43
1:E:729:THR:HB	1:E:789:SER:HB2	2.00	0.43
1:L:85:ILE:O	1:L:89:PHE:N	2.46	0.43
1:I:420:MET:HE2	1:I:424:GLY:HA2	2.00	0.43
1:L:40:GLU:HG2	1:L:286:TYR:CD2	2.50	0.43
1:L:394:ARG:O	1:L:398:LEU:HB2	2.19	0.43
1:B:159:ALA:O	1:B:163:LYS:N	2.39	0.43
1:E:231:ARG:HH11	1:E:242:GLU:HB2	1.83	0.43
1:B:579:ASN:HA	1:B:582:LEU:HB2	2.01	0.43
1:E:30:GLU:OE2	1:E:34:ARG:NH2	2.47	0.43
1:E:677:MET:HE2	1:E:677:MET:O	2.19	0.43
1:L:659:ILE:HD12	1:L:660:ASP:N	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:826:LYS:O	1:I:829:ARG:HG2	2.18	0.43
1:L:560:ASN:O	1:L:878:SER:OG	2.29	0.43
1:L:804:ILE:HD12	1:L:820:ASP:HB3	2.01	0.43
1:I:48:GLU:HA	1:I:262:ALA:HB1	2.01	0.43
1:I:331:ASN:HB3	1:I:334:VAL:HB	2.01	0.43
1:L:824:LEU:O	1:L:828:VAL:HG23	2.19	0.43
1:B:337:VAL:HG21	1:B:512:LEU:HD21	2.00	0.42
1:I:475:PHE:CE2	1:I:879:ASP:HB2	2.54	0.42
1:I:553:GLU:HA	1:I:870:LEU:HG	2.01	0.42
1:L:725:VAL:HG23	1:L:727:TRP:HZ3	1.84	0.42
1:B:131:ASN:HB3	1:B:133:THR:HG22	2.01	0.42
1:I:714:LYS:HD3	1:I:714:LYS:HA	1.48	0.42
1:I:808:ALA:HB3	1:I:815:GLY:HA3	2.01	0.42
1:L:299:THR:OG1	1:L:301:SER:O	2.30	0.42
1:I:115:ALA:O	1:I:118:THR:OG1	2.34	0.42
1:I:330:ILE:O	1:I:332:LYS:HD2	2.20	0.42
1:I:727:TRP:HB3	1:I:845:PHE:CD1	2.54	0.42
1:L:332:LYS:H	1:L:332:LYS:HG2	1.55	0.42
1:L:349:VAL:HG21	1:L:508:PRO:HG3	2.01	0.42
1:L:876:LEU:HD12	1:L:876:LEU:H	1.84	0.42
1:B:345:LYS:HB2	1:B:348:PRO:HA	2.02	0.42
1:E:78:LEU:HD23	1:E:78:LEU:HA	1.91	0.42
1:I:138:ALA:HB3	1:I:210:ILE:HG23	2.01	0.42
1:I:536:PHE:CZ	1:I:821:ALA:HB1	2.55	0.42
1:I:728:VAL:HG22	1:I:734:PRO:HB3	2.02	0.42
1:L:817:ILE:HD12	1:L:819:ALA:H	1.85	0.42
1:E:122:THR:HG21	1:E:220:LEU:HD22	2.01	0.42
1:I:39:LEU:O	1:I:43:SER:N	2.52	0.42
1:B:272:VAL:HG23	1:B:273:VAL:HG13	2.01	0.42
1:E:269:GLN:HE22	1:E:407:LYS:NZ	2.17	0.42
1:E:700:LYS:HE3	1:E:700:LYS:HB2	1.68	0.42
1:L:345:LYS:HD3	1:L:348:PRO:HA	2.02	0.42
1:L:421:ASP:OD1	1:L:425:ARG:N	2.52	0.42
1:L:264:ILE:HG13	1:L:292:ARG:CZ	2.50	0.42
1:B:833:VAL:HG21	1:B:876:LEU:HG	2.02	0.42
1:I:149:ALA:HB1	1:I:201:TRP:CZ3	2.53	0.42
1:I:532:LEU:HD12	1:I:533:PRO:HD2	2.01	0.42
1:I:725:VAL:HG22	1:I:737:GLN:HB3	2.01	0.42
1:L:278:TRP:CD2	1:L:296:LEU:HD23	2.55	0.42
1:E:8:LYS:HE2	1:E:8:LYS:HB2	1.74	0.41
1:E:54:MET:O	1:E:58:GLN:HG3	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:248:PRO:O	1:I:252:GLU:HG2	2.20	0.41
1:L:67:ASN:OD1	1:L:68:ALA:N	2.54	0.41
1:L:549:MET:HB3	1:L:842:LEU:HD11	2.02	0.41
1:L:566:THR:OG1	1:L:567:VAL:N	2.53	0.41
1:B:550:LEU:HB2	1:B:691:ALA:HB1	2.02	0.41
1:B:718:ILE:H	1:B:718:ILE:HG13	1.71	0.41
1:E:117:ILE:HG23	1:E:751:PHE:CE2	2.55	0.41
1:I:85:ILE:HA	1:I:219:MET:HE1	2.02	0.41
1:B:163:LYS:O	1:B:167:GLU:N	2.53	0.41
1:B:574:VAL:HG21	1:B:685:VAL:HG22	2.01	0.41
1:L:801:LYS:HD2	1:L:801:LYS:HA	1.90	0.41
1:B:829:ARG:NH2	1:B:882:PHE:H	2.19	0.41
1:I:138:ALA:HA	1:I:141:ILE:HD12	2.03	0.41
1:L:666:MET:SD	1:L:666:MET:N	2.90	0.41
1:E:6:ILE:HD12	1:E:6:ILE:HA	1.92	0.41
1:E:278:TRP:CD2	1:E:296:LEU:HD23	2.55	0.41
1:I:272:VAL:HA	1:I:414:ILE:HG22	2.02	0.41
1:L:118:THR:O	1:L:122:THR:HG23	2.20	0.41
1:B:122:THR:HG22	1:B:137:VAL:HG13	2.03	0.41
1:E:37:LEU:HD12	1:E:288:ALA:HB2	2.03	0.41
1:I:466:ASN:OD1	1:I:478:ARG:NH1	2.53	0.41
1:B:396:ILE:HD12	1:B:397:SER:N	2.35	0.41
1:B:432:PHE:HE2	1:B:444:LEU:HD21	1.86	0.41
1:E:248:PRO:HA	1:E:251:ALA:HB3	2.03	0.41
1:I:57:ARG:HH12	2:J:17:DG:H5''	1.85	0.41
1:L:457:TYR:CD1	1:L:521:VAL:HG11	2.56	0.41
1:I:142:GLY:O	1:I:146:GLU:HB2	2.20	0.41
1:I:303:LYS:HD3	1:I:303:LYS:N	2.36	0.41
1:I:713:LYS:H	1:I:713:LYS:HG2	1.62	0.41
1:I:842:LEU:HD23	1:I:842:LEU:HA	1.84	0.41
1:I:861:MET:HA	1:I:862:PRO:HD3	1.96	0.41
1:L:13:ASP:OD1	1:L:13:ASP:N	2.53	0.41
1:L:51:PHE:CD1	1:L:262:ALA:HB2	2.55	0.41
1:L:281:ILE:HD12	1:L:282:THR:OG1	2.21	0.41
1:L:392:LYS:O	1:L:396:ILE:HG13	2.21	0.41
1:L:826:LYS:HA	1:L:826:LYS:HD3	1.89	0.41
1:B:100:PRO:HB2	1:B:215:ARG:NH1	2.36	0.41
1:E:113:ALA:O	1:E:117:ILE:HD12	2.21	0.41
1:E:119:ILE:H	1:E:119:ILE:HG13	1.67	0.41
1:E:281:ILE:HG21	1:E:309:GLU:HA	2.02	0.41
1:I:176:HIS:CD2	1:I:177:VAL:HG13	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:397:SER:O	1:I:401:MET:HG2	2.21	0.41
1:B:772:HIS:CD2	2:A:8:DG:H4'	2.56	0.40
1:E:53:LYS:HB3	1:E:53:LYS:HE3	1.70	0.40
1:E:412:LYS:H	1:E:412:LYS:HG2	1.65	0.40
1:L:316:VAL:HG21	1:L:733:PHE:HB2	2.02	0.40
1:B:226:MET:HG2	1:B:227:VAL:HG13	2.04	0.40
1:B:274:PRO:HA	1:B:275:PRO:HD3	1.93	0.40
1:B:549:MET:HE3	1:B:842:LEU:HG	2.04	0.40
1:L:418:TYR:HD2	1:L:426:VAL:HG12	1.86	0.40
1:L:677:MET:HA	1:L:680:LEU:HD12	2.03	0.40
1:L:710:VAL:HG23	1:L:719:LEU:HB2	2.04	0.40
1:B:153:ARG:HG3	1:B:157:LEU:HD21	2.04	0.40
1:B:810:ILE:HB	1:B:813:SER:HB3	2.03	0.40
1:E:281:ILE:HD12	1:E:305:LEU:HG	2.03	0.40
1:E:572:GLY:O	1:E:576:LYS:HG2	2.22	0.40
1:I:494:LYS:HD2	1:I:494:LYS:HA	1.88	0.40
1:I:647:ARG:HE	1:I:647:ARG:HB3	1.70	0.40
1:B:102:ALA:O	1:B:106:LEU:HD23	2.21	0.40
1:B:480:LYS:O	1:B:484:GLU:HG3	2.21	0.40
1:E:11:PHE:HE2	1:E:48:GLU:HB2	1.86	0.40
1:E:199:GLU:HB2	1:E:201:TRP:CE3	2.55	0.40
1:I:281:ILE:H	1:I:281:ILE:HG13	1.72	0.40
1:E:135:GLN:H	1:E:135:GLN:HG2	1.65	0.40
1:E:853:LEU:HD12	1:E:853:LEU:HA	1.88	0.40
1:I:204:TRP:N	1:I:204:TRP:CD1	2.88	0.40
1:I:307:ARG:HD3	1:I:736:TRP:CE2	2.56	0.40
1:L:264:ILE:HD13	1:L:264:ILE:HG21	1.91	0.40
1:L:681:ILE:O	1:L:685:VAL:HG23	2.22	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [\(i\)](#)

5.3.1 Protein backbone [\(i\)](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	B	850/883 (96%)	824 (97%)	24 (3%)	2 (0%)	47	78
1	E	831/883 (94%)	813 (98%)	18 (2%)	0	100	100
1	I	823/883 (93%)	800 (97%)	23 (3%)	0	100	100
1	L	726/883 (82%)	711 (98%)	15 (2%)	0	100	100
All	All	3230/3532 (91%)	3148 (98%)	80 (2%)	2 (0%)	51	82

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	811	HIS
1	B	227	VAL

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	B	695/729 (95%)	649 (93%)	46 (7%)	16	44
1	E	688/729 (94%)	648 (94%)	40 (6%)	20	50
1	I	674/729 (92%)	611 (91%)	63 (9%)	9	27
1	L	530/729 (73%)	493 (93%)	37 (7%)	15	41
All	All	2587/2916 (89%)	2401 (93%)	186 (7%)	14	39

All (186) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	3	THR
1	B	10	ASP
1	B	13	ASP
1	B	21	PHE
1	B	51	PHE
1	B	63	GLU
1	B	73	LEU
1	B	81	MET
1	B	93	LYS

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Mol	Chain	Res	Type
1	B	98	LYS
1	B	99	ARG
1	B	114	VAL
1	B	121	THR
1	B	133	THR
1	B	157	LEU
1	B	160	LYS
1	B	169	GLN
1	B	202	SER
1	B	254	ILE
1	B	257	ARG
1	B	265	SER
1	B	289	ASN
1	B	306	MET
1	B	310	ASP
1	B	375	THR
1	B	378	LYS
1	B	386	ARG
1	B	398	LEU
1	B	402	LEU
1	B	423	ARG
1	B	472	LYS
1	B	527	SER
1	B	559	VAL
1	B	564	SER
1	B	627	ARG
1	B	637	LEU
1	B	641	SER
1	B	666	MET
1	B	687	VAL
1	B	700	LYS
1	B	722	ARG
1	B	728	VAL
1	B	776	SER
1	B	783	VAL
1	B	873	ARG
1	B	879	ASP
1	E	8	LYS
1	E	21	PHE
1	E	27	HIS
1	E	31	ARG
1	E	34	ARG

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Mol	Chain	Res	Type
1	E	51	PHE
1	E	59	LEU
1	E	88	TRP
1	E	121	THR
1	E	150	ARG
1	E	163	LYS
1	E	172	LYS
1	E	201	TRP
1	E	206	LYS
1	E	229	LEU
1	E	265	SER
1	E	292	ARG
1	E	302	LYS
1	E	306	MET
1	E	385	TYR
1	E	388	ASP
1	E	389	LYS
1	E	401	MET
1	E	423	ARG
1	E	471	ASP
1	E	473	VAL
1	E	514	PHE
1	E	565	GLU
1	E	628	SER
1	E	641	SER
1	E	651	LEU
1	E	666	MET
1	E	714	LYS
1	E	721	LYS
1	E	726	HIS
1	E	776	SER
1	E	783	VAL
1	E	811	HIS
1	E	812	ASP
1	E	849	PHE
1	I	2	ASN
1	I	3	THR
1	I	21	PHE
1	I	34	ARG
1	I	35	GLU
1	I	52	ARG
1	I	84	ARG

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Mol	Chain	Res	Type
1	I	116	TYR
1	I	121	THR
1	I	126	LEU
1	I	153	ARG
1	I	158	GLU
1	I	161	HIS
1	I	162	PHE
1	I	173	ARG
1	I	176	HIS
1	I	180	LYS
1	I	196	LEU
1	I	223	SER
1	I	230	HIS
1	I	291	ARG
1	I	305	LEU
1	I	307	ARG
1	I	346	HIS
1	I	385	TYR
1	I	386	ARG
1	I	387	LYS
1	I	389	LYS
1	I	397	SER
1	I	422	TRP
1	I	423	ARG
1	I	430	SER
1	I	438	ASP
1	I	460	LEU
1	I	472	LYS
1	I	478	ARG
1	I	492	CYS
1	I	495	SER
1	I	507	SER
1	I	536	PHE
1	I	537	ASP
1	I	546	PHE
1	I	557	ARG
1	I	627	ARG
1	I	632	ARG
1	I	643	GLU
1	I	663	LYS
1	I	677	MET
1	I	689	VAL

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Mol	Chain	Res	Type
1	I	711	LYS
1	I	722	ARG
1	I	740	LYS
1	I	749	LEU
1	I	781	ASN
1	I	802	TYR
1	I	805	GLU
1	I	812	ASP
1	I	829	ARG
1	I	842	LEU
1	I	846	TYR
1	I	851	ASP
1	I	855	GLU
1	I	882	PHE
1	L	3	THR
1	L	13	ASP
1	L	21	PHE
1	L	23	THR
1	L	27	HIS
1	L	35	GLU
1	L	78	LEU
1	L	110	LYS
1	L	127	THR
1	L	133	THR
1	L	265	SER
1	L	273	VAL
1	L	349	VAL
1	L	397	SER
1	L	403	GLU
1	L	423	ARG
1	L	438	ASP
1	L	471	ASP
1	L	527	SER
1	L	528	TYR
1	L	537	ASP
1	L	540	CYS
1	L	546	PHE
1	L	561	LEU
1	L	566	THR
1	L	576	LYS
1	L	633	SER
1	L	635	MET

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Mol	Chain	Res	Type
1	L	644	PHE
1	L	666	MET
1	L	711	LYS
1	L	766	ASP
1	L	783	VAL
1	L	789	SER
1	L	818	PRO
1	L	870	LEU
1	L	873	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	321	ASN
1	I	176	HIS
1	I	544	GLN
1	L	545	HIS
1	L	560	ASN
1	L	568	GLN
1	L	672	GLN
1	L	857	GLN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
3	C	6/12 (50%)	0	0
3	G	6/12 (50%)	0	0
3	K	6/12 (50%)	0	0
3	N	6/12 (50%)	0	0
All	All	24/48 (50%)	0	0

There are no RNA backbone outliers to report.

There are no RNA pucker outliers to report.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 11 ligands modelled in this entry, 4 are monoatomic - leaving 7 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
6	3PO	B	902	7	8,12,12	0.69	0	15,20,20	1.31	2 (13%)
5	GOL	B	901	-	5,5,5	0.93	0	5,5,5	0.99	0
6	3PO	E	901	7	8,12,12	0.69	0	15,20,20	1.17	2 (13%)
5	GOL	I	901	-	5,5,5	0.91	0	5,5,5	0.97	0
6	3PO	L	901	7	8,12,12	0.72	0	15,20,20	1.22	2 (13%)
5	GOL	C	101	-	5,5,5	0.92	0	5,5,5	0.99	0
6	3PO	I	902	7	8,12,12	0.69	0	15,20,20	1.23	2 (13%)

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
6	3PO	B	902	7	-	1/12/12/12	-
5	GOL	B	901	-	-	0/4/4/4	-
6	3PO	E	901	7	-	0/12/12/12	-
5	GOL	I	901	-	-	3/4/4/4	-
6	3PO	L	901	7	-	3/12/12/12	-
5	GOL	C	101	-	-	2/4/4/4	-
6	3PO	I	902	7	-	2/12/12/12	-

There are no bond length outliers.

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	B	902	3PO	PB-O3A-PA	-2.92	122.80	132.83
6	B	902	3PO	PB-O3B-PG	-2.73	123.46	132.83
6	L	901	3PO	PB-O3A-PA	-2.69	123.61	132.83
6	E	901	3PO	PB-O3A-PA	-2.66	123.70	132.83
6	I	902	3PO	PB-O3B-PG	-2.59	123.94	132.83
6	I	902	3PO	PB-O3A-PA	-2.51	124.20	132.83
6	L	901	3PO	PB-O3B-PG	-2.46	124.38	132.83
6	E	901	3PO	PB-O3B-PG	-2.07	125.71	132.83

There are no chirality outliers.

All (11) torsion outliers are listed below:

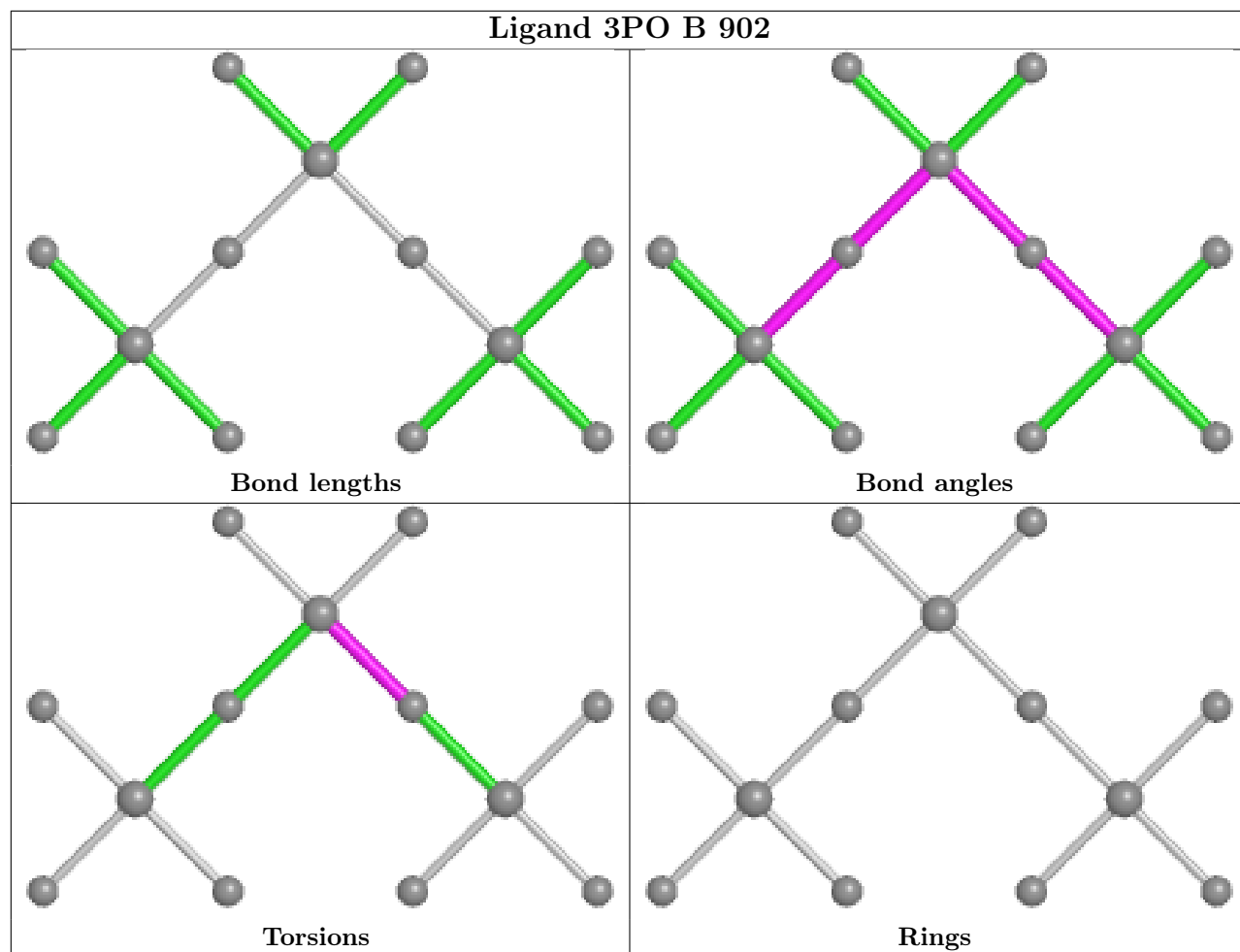
Mol	Chain	Res	Type	Atoms
6	L	901	3PO	PB-O3B-PG-O2G
6	L	901	3PO	PB-O3B-PG-O3G
5	C	101	GOL	O1-C1-C2-C3
5	I	901	GOL	O1-C1-C2-C3
5	I	901	GOL	C1-C2-C3-O3
5	C	101	GOL	O1-C1-C2-O2
5	I	901	GOL	O1-C1-C2-O2
6	I	902	3PO	PA-O3A-PB-O1B
6	B	902	3PO	PG-O3B-PB-O1B
6	I	902	3PO	PA-O3A-PB-O2B
6	L	901	3PO	PA-O3A-PB-O2B

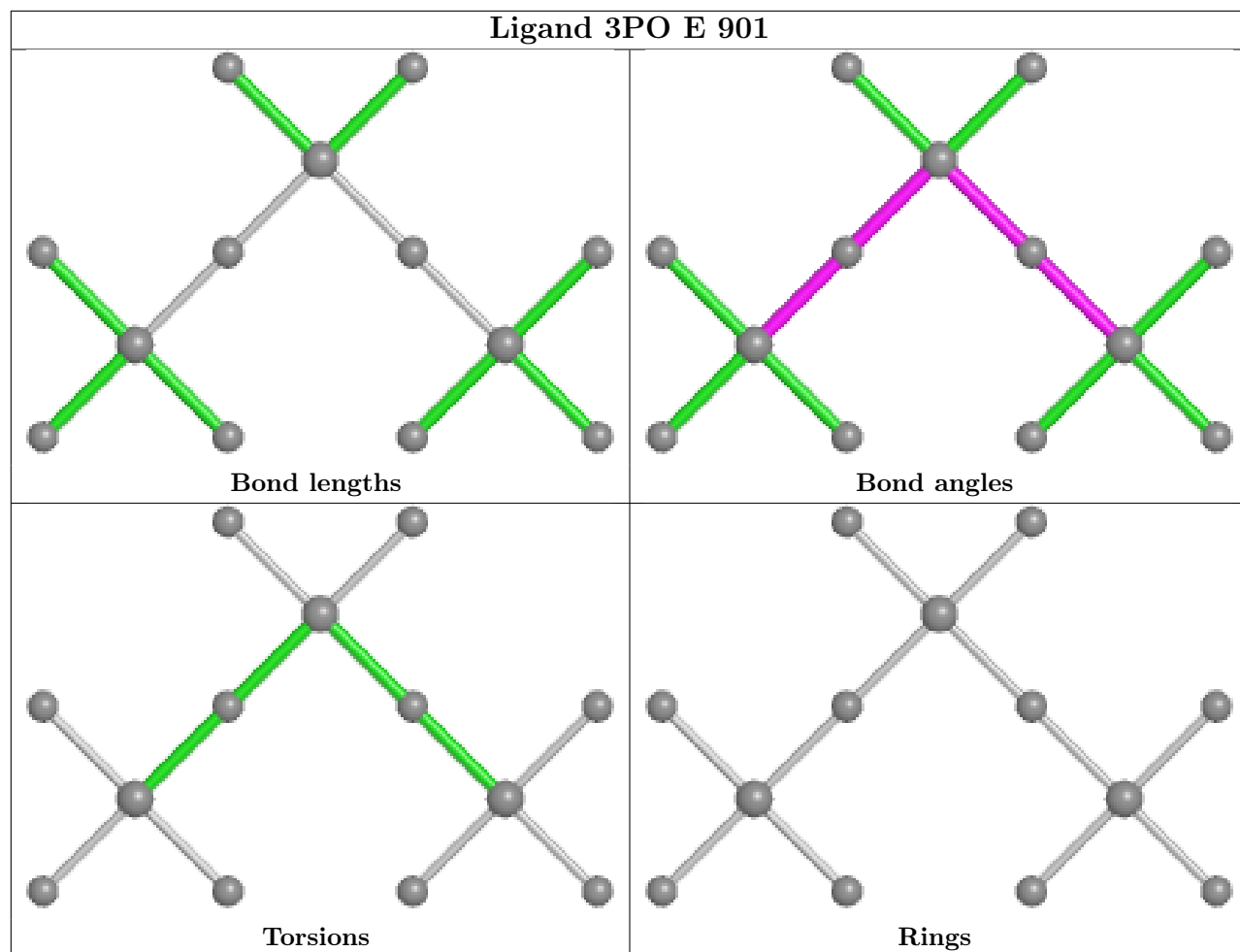
There are no ring outliers.

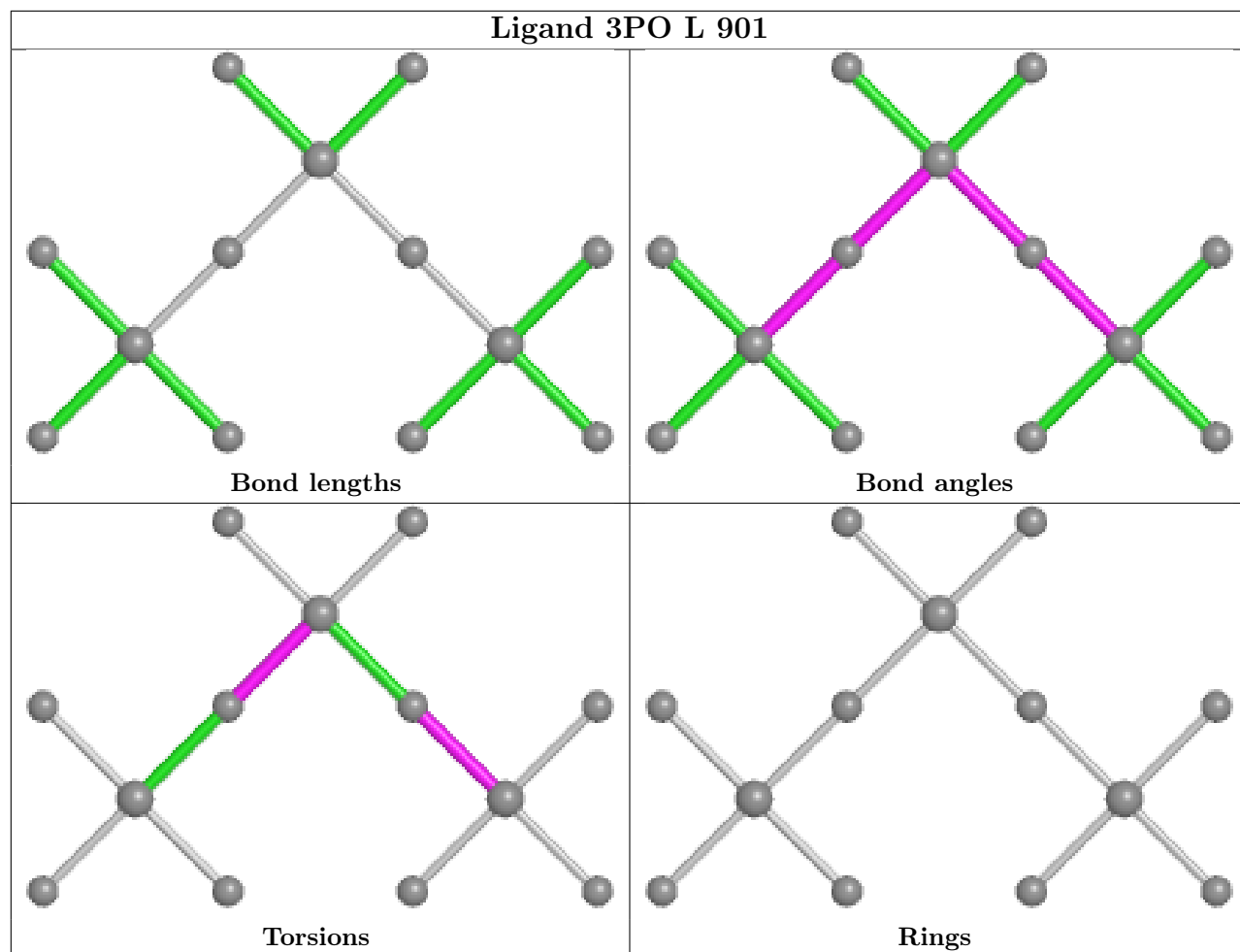
1 monomer is involved in 2 short contacts:

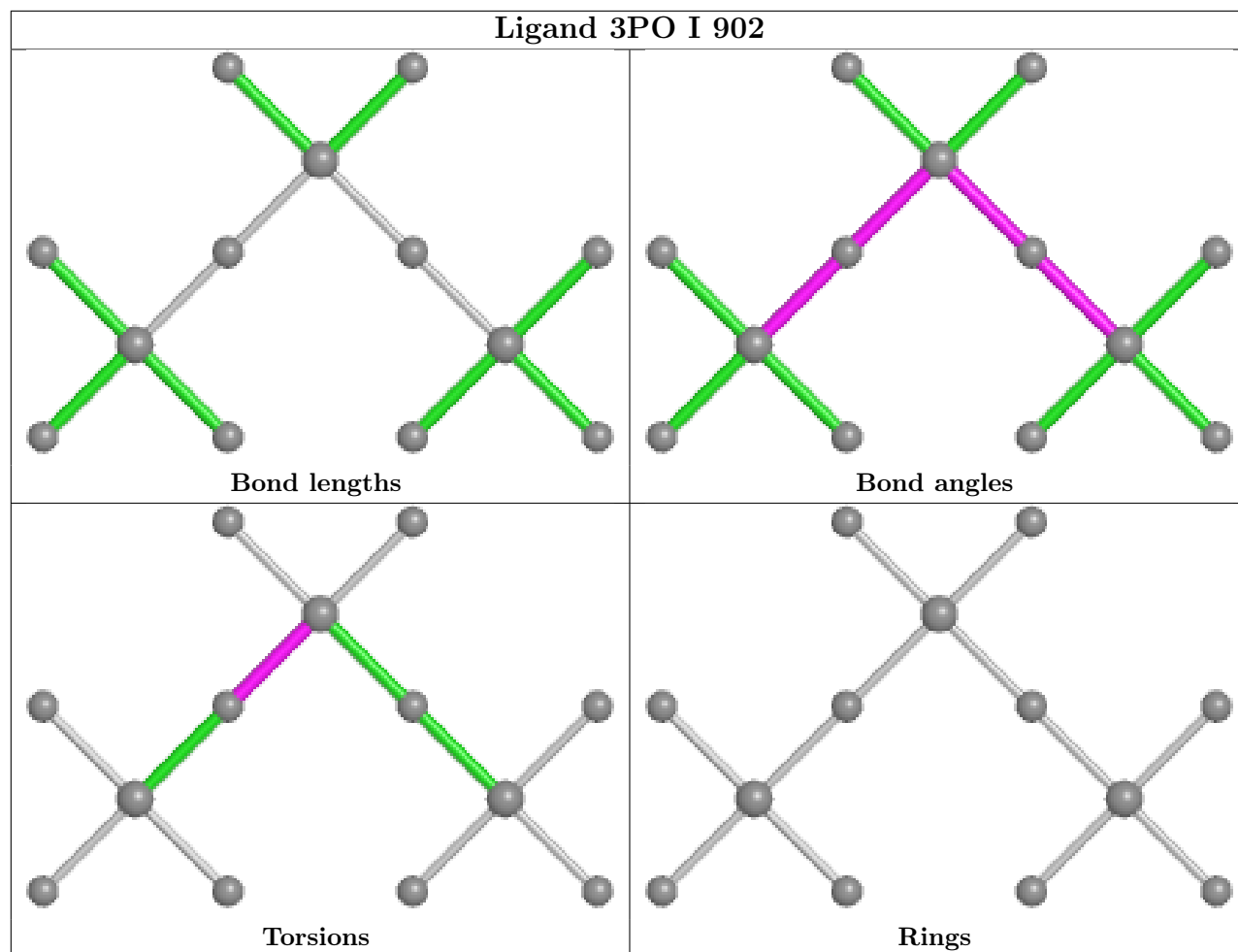
Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	E	901	3PO	2	0

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, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	B	856/883 (96%)	0.36	46 (5%) 25 22	39, 81, 191, 296	0
1	E	841/883 (95%)	0.43	60 (7%) 16 12	46, 81, 202, 308	0
1	I	833/883 (94%)	1.02	169 (20%) 1 0	86, 153, 225, 304	0
1	L	741/883 (83%)	0.69	87 (11%) 4 3	84, 128, 189, 245	0
2	A	16/18 (88%)	0.52	0 100 100	68, 109, 266, 271	0
2	F	16/18 (88%)	0.39	1 (6%) 20 16	63, 119, 255, 275	0
2	J	11/18 (61%)	0.40	0 100 100	105, 111, 194, 228	0
2	M	13/18 (72%)	0.59	1 (7%) 13 10	104, 127, 200, 238	0
3	C	8/12 (66%)	0.80	1 (12%) 3 3	63, 80, 96, 113	0
3	G	8/12 (66%)	1.16	0 100 100	65, 90, 148, 176	0
3	K	8/12 (66%)	0.87	1 (12%) 3 3	119, 121, 163, 193	0
3	N	8/12 (66%)	0.81	1 (12%) 3 3	110, 137, 190, 191	0
4	D	8/9 (88%)	1.17	1 (12%) 3 3	205, 222, 229, 271	0
4	H	8/9 (88%)	0.69	2 (25%) 0 0	189, 207, 227, 255	0
4	O	5/9 (55%)	0.54	1 (20%) 1 0	200, 215, 229, 246	0
All	All	3380/3679 (91%)	0.62	371 (10%) 5 4	39, 121, 209, 308	0

All (371) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	I	625	VAL	8.3
1	L	129	ALA	7.4
1	I	472	LYS	6.9
1	L	816	THR	6.8
1	B	237	VAL	6.6
1	I	665	LEU	6.5
1	I	670	PRO	6.2

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Mol	Chain	Res	Type	RSRZ
1	I	669	GLN	6.0
1	E	227	VAL	6.0
1	I	671	ASN	6.0
1	I	596	THR	6.0
1	L	116	TYR	5.9
1	I	558	ALA	5.9
1	L	344	TRP	5.9
1	L	119	ILE	5.8
1	E	140	ALA	5.8
1	I	676	TYR	5.6
1	I	688	THR	5.5
1	E	8	LYS	5.4
1	I	565	GLU	5.3
1	B	85	ILE	5.2
1	E	754	GLN	5.2
1	I	672	GLN	5.1
1	I	626	THR	5.0
1	E	178	TYR	5.0
1	I	647	ARG	5.0
1	B	229	LEU	5.0
1	E	109	ILE	5.0
1	L	130	ASP	4.9
1	L	65	ALA	4.9
1	L	17	ALA	4.8
1	E	173	ARG	4.8
1	I	597	VAL	4.8
1	I	17	ALA	4.7
1	L	6	ILE	4.7
1	E	18	ALA	4.7
1	I	667	PHE	4.7
1	E	201	TRP	4.7
1	L	676	TYR	4.7
1	I	685	VAL	4.7
1	E	94	ALA	4.6
1	I	611	LEU	4.6
1	B	89	PHE	4.5
1	I	481	PHE	4.5
1	I	629	VAL	4.5
1	B	78	LEU	4.5
1	I	782	PHE	4.4
1	L	666	MET	4.4
1	E	174	VAL	4.4

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Mol	Chain	Res	Type	RSRZ
1	B	220	LEU	4.4
1	L	81	MET	4.4
1	L	9	ASN	4.4
1	L	120	LYS	4.4
1	I	594	VAL	4.3
1	B	244	ILE	4.3
1	E	355	ILE	4.2
1	I	570	ILE	4.2
1	I	715	THR	4.2
1	I	666	MET	4.2
1	L	18	ALA	4.2
1	L	122	THR	4.2
1	B	142	GLY	4.2
1	I	18	ALA	4.2
1	B	216	CYS	4.1
1	E	101	THR	4.1
1	E	93	LYS	4.1
1	L	682	TRP	4.1
1	B	135	GLN	4.1
1	I	24	LEU	4.1
1	L	126	LEU	4.1
1	L	263	GLY	4.1
1	I	8	LYS	4.0
1	B	601	ASN	4.0
1	L	670	PRO	4.0
1	L	457	TYR	4.0
1	B	225	GLY	4.0
1	I	689	VAL	4.0
1	I	122	THR	4.0
1	I	595	VAL	4.0
1	L	128	SER	4.0
1	E	228	SER	3.9
1	I	845	PHE	3.9
1	I	655	ILE	3.9
1	B	241	SER	3.9
1	E	159	ALA	3.9
1	L	117	ILE	3.9
1	L	123	LEU	3.9
1	I	604	GLU	3.9
1	L	625	VAL	3.8
1	I	883	ALA	3.8
1	E	229	LEU	3.8

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Mol	Chain	Res	Type	RSRZ
1	I	561	LEU	3.8
1	I	550	LEU	3.8
1	L	667	PHE	3.8
1	I	600	GLU	3.7
1	I	119	ILE	3.7
1	B	719	LEU	3.7
1	E	85	ILE	3.7
1	L	668	THR	3.7
1	I	9	ASN	3.7
1	I	656	GLN	3.7
1	I	630	THR	3.7
1	L	664	GLY	3.6
1	I	836	TYR	3.6
1	L	327	ALA	3.6
1	E	176	HIS	3.6
1	I	674	ALA	3.6
1	I	573	ILE	3.6
1	E	91	GLU	3.5
1	I	578	VAL	3.5
1	B	860	LYS	3.5
1	I	748	ASN	3.5
1	E	142	GLY	3.5
1	I	459	TRP	3.5
1	I	620	TRP	3.5
1	L	265	SER	3.4
1	L	540	CYS	3.4
1	I	691	ALA	3.4
1	I	680	LEU	3.4
1	B	711	LYS	3.4
1	I	377	TRP	3.4
1	I	651	LEU	3.4
1	L	70	ALA	3.4
1	I	681	ILE	3.3
1	I	246	LEU	3.3
1	I	497	LEU	3.3
1	B	118	THR	3.3
1	I	861	MET	3.3
1	I	714	LYS	3.3
1	L	539	SER	3.3
1	I	76	THR	3.3
1	L	655	ILE	3.3
1	I	203	SER	3.3

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Mol	Chain	Res	Type	RSRZ
1	I	698	TRP	3.3
1	B	242	GLU	3.3
1	I	580	GLU	3.3
1	I	637	LEU	3.3
1	L	124	ALA	3.3
1	E	108	GLU	3.3
1	I	543	ILE	3.3
1	B	261	LEU	3.3
1	L	8	LYS	3.2
1	I	654	THR	3.2
1	I	854	HIS	3.2
1	L	264	ILE	3.2
1	I	157	LEU	3.2
1	I	201	TRP	3.2
1	I	344	TRP	3.2
1	I	858	LEU	3.2
1	I	811	HIS	3.2
1	I	711	LYS	3.2
1	I	375	THR	3.2
1	E	220	LEU	3.2
1	E	217	ILE	3.1
1	B	133	THR	3.1
1	L	78	LEU	3.1
1	I	640	GLY	3.1
1	B	96	ARG	3.1
1	E	6	ILE	3.1
1	I	718	ILE	3.1
1	E	750	MET	3.1
1	I	862	PRO	3.1
1	L	114	VAL	3.1
1	I	880	PHE	3.1
1	L	83	ALA	3.1
1	I	642	LYS	3.1
1	E	86	ASN	3.1
1	I	662	GLY	3.1
1	I	842	LEU	3.1
1	I	250	TYR	3.0
1	L	647	ARG	3.0
1	E	82	ILE	3.0
1	B	196	LEU	3.0
1	L	121	THR	3.0
1	L	125	CYS	3.0

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Mol	Chain	Res	Type	RSRZ
1	E	391	ARG	3.0
1	E	114	VAL	3.0
1	I	69	ALA	3.0
1	I	502	TRP	3.0
1	I	64	VAL	3.0
1	I	592	ASN	3.0
1	I	577	LYS	3.0
1	L	718	ILE	3.0
1	I	226	MET	3.0
1	I	687	VAL	3.0
1	B	74	ILE	2.9
1	L	715	THR	2.9
1	L	519	ALA	2.9
1	I	72	PRO	2.9
1	E	158	GLU	2.9
1	I	743	ILE	2.9
1	I	123	LEU	2.9
1	I	477	GLU	2.9
1	L	227	VAL	2.9
1	I	582	LEU	2.9
4	H	2	DT	2.9
1	L	16	LEU	2.9
1	I	528	TYR	2.9
4	D	2	DT	2.9
1	I	744	GLN	2.9
1	B	160	LYS	2.9
1	B	226	MET	2.8
1	I	381	ALA	2.8
1	I	539	SER	2.8
1	I	797	TRP	2.8
1	I	391	ARG	2.8
1	I	92	VAL	2.8
1	L	669	GLN	2.8
4	O	2	DT	2.8
1	I	686	SER	2.8
1	I	601	ASN	2.8
1	B	238	GLY	2.8
1	I	496	PRO	2.8
1	L	228	SER	2.8
1	L	536	PHE	2.8
1	I	73	LEU	2.8
1	I	518	TYR	2.8

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Mol	Chain	Res	Type	RSRZ
1	I	530	CYS	2.8
1	L	665	LEU	2.8
1	B	247	ALA	2.8
1	L	113	ALA	2.8
1	L	79	PRO	2.8
1	B	224	THR	2.8
1	I	118	THR	2.8
1	L	654	THR	2.8
1	I	814	PHE	2.7
1	L	118	THR	2.7
1	I	7	ALA	2.7
1	E	749	LEU	2.7
1	I	562	LEU	2.7
1	L	690	VAL	2.7
1	B	195	LEU	2.7
1	I	112	GLU	2.7
1	I	547	SER	2.7
1	B	607	GLU	2.7
1	L	685	VAL	2.7
1	I	541	SER	2.6
1	I	256	THR	2.6
1	L	127	THR	2.6
1	I	609	VAL	2.6
1	L	480	LYS	2.6
1	I	82	ILE	2.6
1	I	374	LEU	2.6
1	E	151	PHE	2.6
1	I	643	GLU	2.6
1	B	228	SER	2.6
1	E	209	SER	2.6
1	I	80	LYS	2.6
1	I	135	GLN	2.6
1	E	182	PHE	2.6
1	I	623	TYR	2.6
1	L	836	TYR	2.6
1	B	752	LEU	2.6
1	E	137	VAL	2.6
1	E	88	TRP	2.6
1	E	169	GLN	2.5
1	I	382	ALA	2.5
1	I	20	PRO	2.5
1	I	696	MET	2.5

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Mol	Chain	Res	Type	RSRZ
1	I	161	HIS	2.5
1	L	698	TRP	2.5
1	I	658	ALA	2.5
1	I	16	LEU	2.5
1	I	229	LEU	2.5
1	I	180	LYS	2.5
1	I	552	ASP	2.5
1	L	688	THR	2.5
1	E	198	GLY	2.5
1	I	254	ILE	2.5
1	I	130	ASP	2.5
1	I	882	PHE	2.5
1	B	129	ALA	2.5
1	E	57	ARG	2.4
1	L	64	VAL	2.4
1	E	665	LEU	2.4
3	N	8	U	2.4
1	L	10	ASP	2.4
1	I	77	LEU	2.4
1	L	75	THR	2.4
1	L	807	PHE	2.4
1	B	76	THR	2.4
1	I	690	VAL	2.4
1	I	537	ASP	2.4
1	E	120	LYS	2.4
1	I	55	PHE	2.4
1	I	79	PRO	2.4
1	E	157	LEU	2.4
1	B	857	GLN	2.4
1	B	158	GLU	2.4
1	B	250	TYR	2.4
1	B	609	VAL	2.4
1	E	90	GLU	2.4
1	I	624	GLY	2.4
1	I	468	ALA	2.3
1	L	636	THR	2.3
1	I	540	CYS	2.3
1	L	59	LEU	2.3
1	E	186	VAL	2.3
1	L	883	ALA	2.3
1	I	700	LYS	2.3
1	B	91	GLU	2.3

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Mol	Chain	Res	Type	RSRZ
1	L	460	LEU	2.3
1	E	96	ARG	2.3
4	H	3	DC	2.3
1	I	313	MET	2.3
1	L	51	PHE	2.3
1	B	80	LYS	2.3
1	B	141	ILE	2.2
1	E	226	MET	2.2
1	L	538	GLY	2.2
1	L	651	LEU	2.2
1	E	212	VAL	2.2
1	I	293	PRO	2.2
1	L	261	LEU	2.2
1	I	141	ILE	2.2
1	L	875	ILE	2.2
1	E	16	LEU	2.2
1	L	77	LEU	2.2
1	E	116	TYR	2.2
1	E	243	THR	2.2
1	E	246	LEU	2.2
1	I	10	ASP	2.2
1	I	376	ALA	2.2
1	B	234	ALA	2.2
1	E	92	VAL	2.2
1	E	250	TYR	2.2
1	I	574	VAL	2.2
1	I	683	GLU	2.2
1	L	872	LEU	2.2
1	B	405	ALA	2.2
1	E	11	PHE	2.2
1	I	19	ILE	2.2
1	L	61	ALA	2.2
1	E	111	PRO	2.2
1	I	202	SER	2.2
1	L	558	ALA	2.2
1	I	208	ASP	2.1
1	L	55	PHE	2.1
3	C	8	U	2.1
1	I	153	ARG	2.1
1	L	809	LEU	2.1
1	I	846	TYR	2.1
1	I	616	LEU	2.1

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Mol	Chain	Res	Type	RSRZ
1	L	867	LYS	2.1
1	B	8	LYS	2.1
1	E	755	PHE	2.1
1	I	750	MET	2.1
1	I	784	HIS	2.1
1	B	883	ALA	2.1
1	B	22	ASN	2.1
1	E	221	ILE	2.1
1	I	373	ALA	2.1
3	K	8	U	2.1
1	E	73	LEU	2.0
1	I	812	ASP	2.0
1	L	254	ILE	2.0
2	F	2	DG	2.0
2	M	14	DG	2.0
1	I	259	GLY	2.0
1	I	538	GLY	2.0
1	I	71	LYS	2.0
1	L	35	GLU	2.0
1	I	521	VAL	2.0
1	I	51	PHE	2.0
1	I	340	VAL	2.0
1	L	226	MET	2.0
1	I	734	PRO	2.0
1	L	24	LEU	2.0
1	E	117	ILE	2.0
1	I	117	ILE	2.0
1	I	613	THR	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.

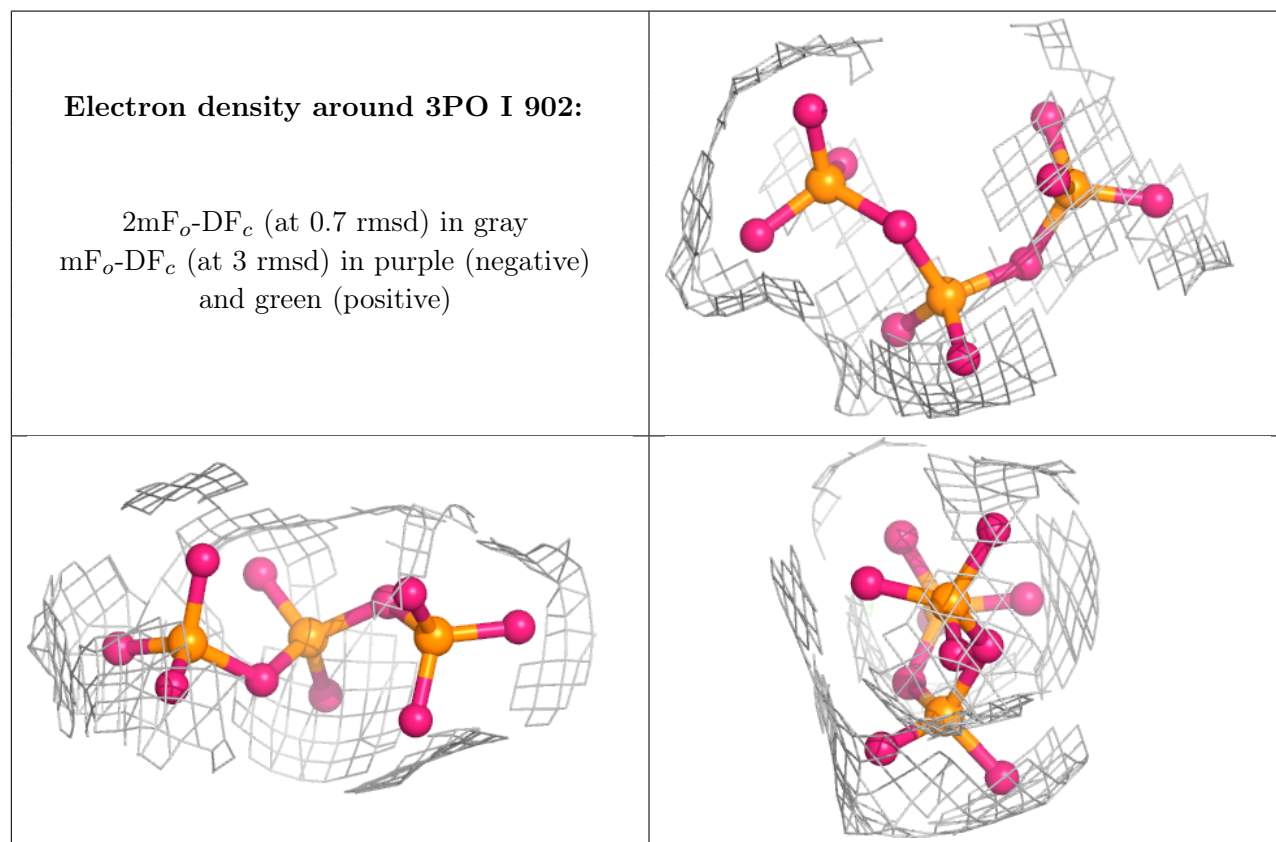
6.4 Ligands [i](#)

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, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

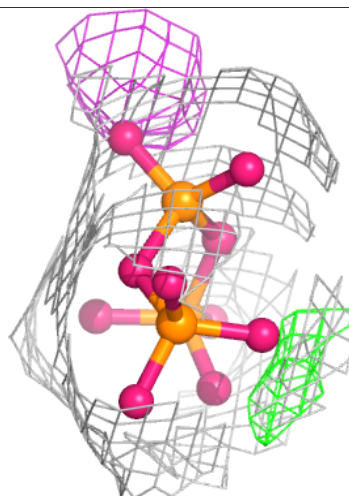
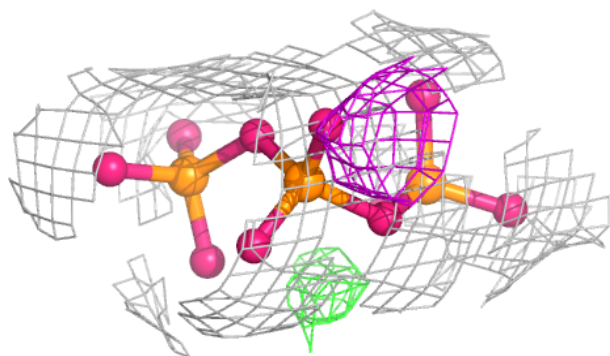
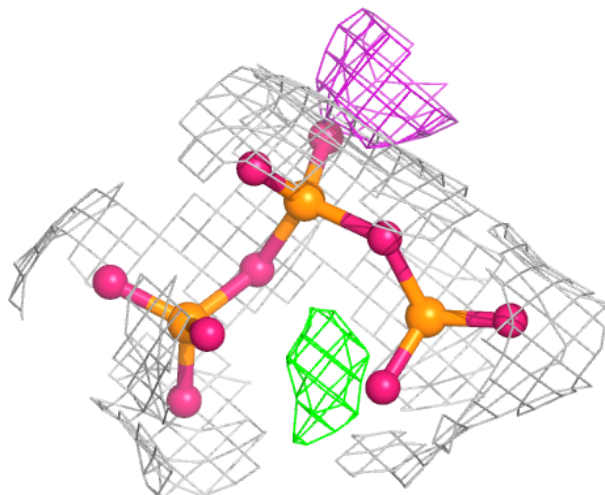
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å ²)	Q<0.9
5	GOL	I	901	6/6	0.75	0.56	135,140,144,150	0
5	GOL	C	101	6/6	0.81	0.34	77,88,95,101	0
7	MG	L	902	1/1	0.83	0.96	124,124,124,124	0
7	MG	B	903	1/1	0.84	0.42	66,66,66,66	0
6	3PO	I	902	13/13	0.88	0.19	148,166,176,176	0
7	MG	E	902	1/1	0.92	0.28	74,74,74,74	0
6	3PO	B	902	13/13	0.92	0.26	72,103,111,126	0
7	MG	I	903	1/1	0.94	0.33	125,125,125,125	0
6	3PO	L	901	13/13	0.94	0.36	141,154,163,168	0
5	GOL	B	901	6/6	0.96	0.24	69,70,90,90	0
6	3PO	E	901	13/13	0.97	0.20	77,108,138,139	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.



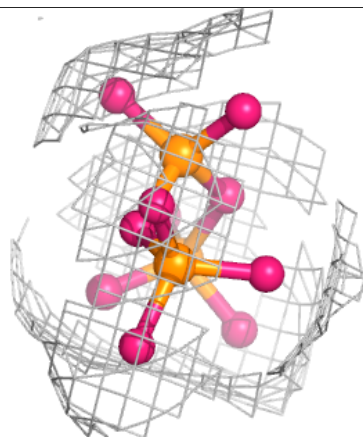
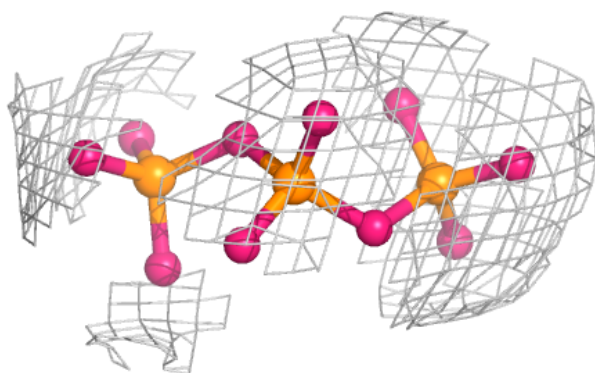
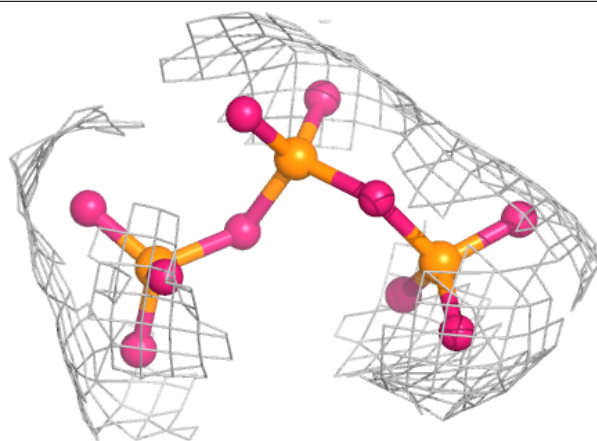
Electron density around 3PO B 902:

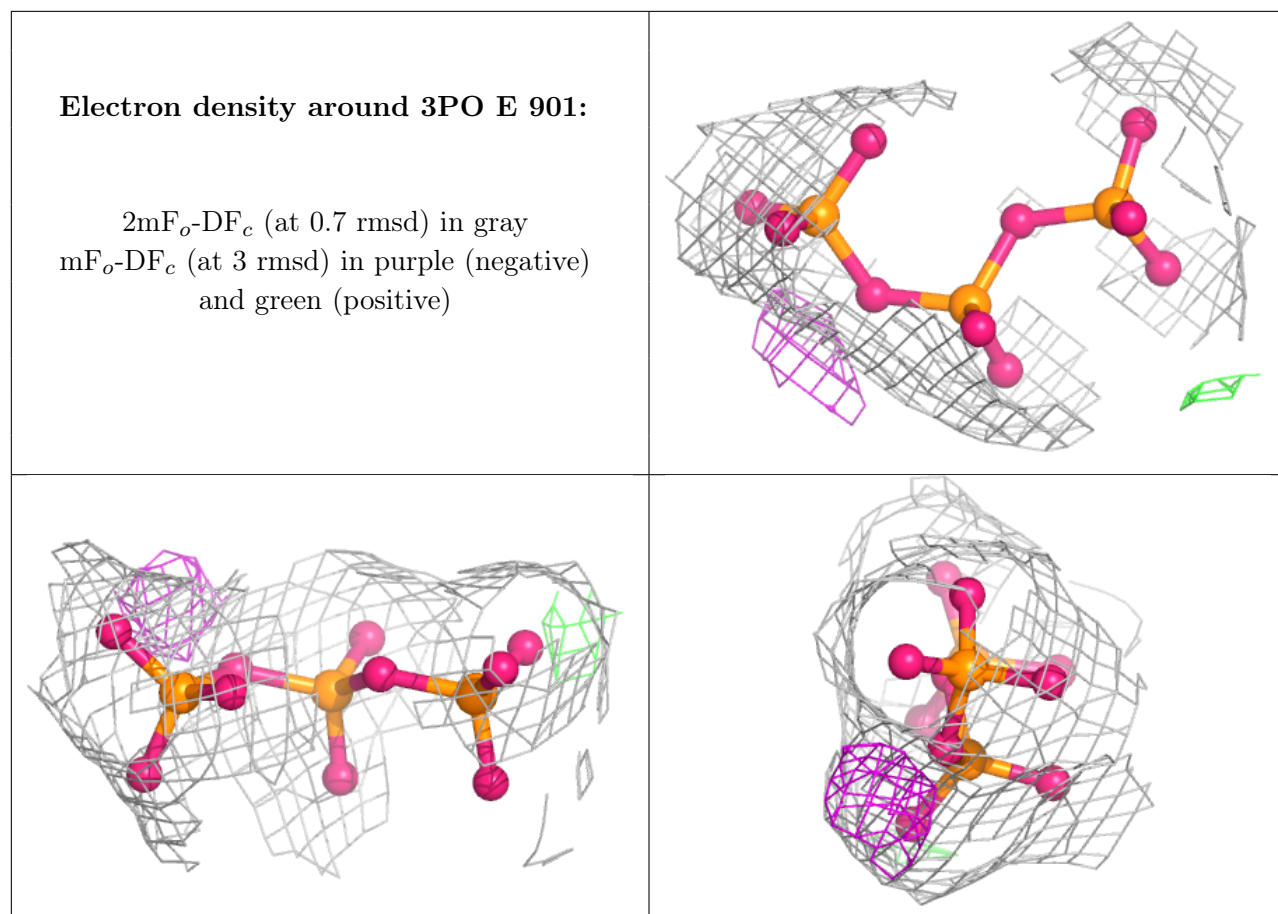
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around 3PO L 901:

$2mF_o-DF_c$ (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.