



# Full wwPDB X-ray Structure Validation Report ⓘ

May 16, 2020 – 10:20 am BST

PDB ID : 3AR4  
Title : Calcium pump crystal structure with bound ATP and TG in the absence of Ca<sup>2+</sup>  
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Deposited on : 2010-11-24  
Resolution : 2.15 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.

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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 : 2.11  
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) : 2.11

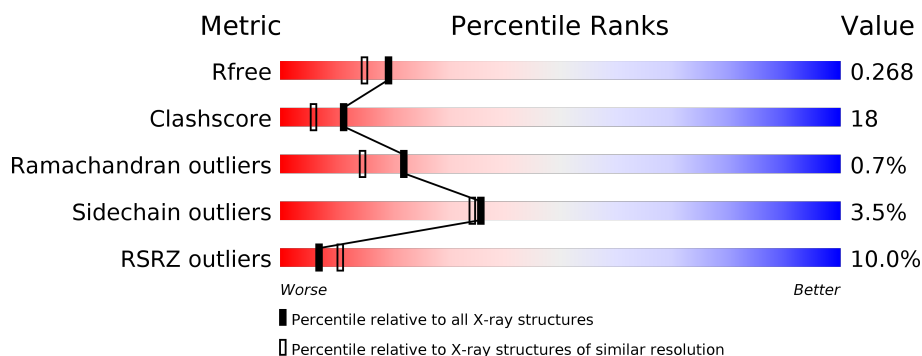
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

## *X-RAY DIFFRACTION*

The reported resolution of this entry is 2.15 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	1479 (2.16-2.16)
Clashscore	141614	1585 (2.16-2.16)
Ramachandran outliers	138981	1560 (2.16-2.16)
Sidechain outliers	138945	1559 (2.16-2.16)
RSRZ outliers	127900	1456 (2.16-2.16)

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 on 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	995	<div> <div>10%</div> <div>66%</div> <div>32%</div> <div>.</div> </div>

## 2 Entry composition [i](#)

There are 7 unique types of molecules in this entry. The entry contains 8188 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.

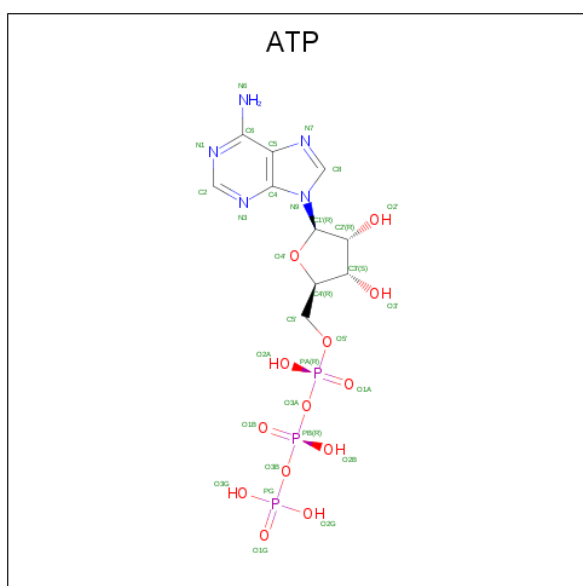
- Molecule 1 is a protein called Sarcoplasmic/endoplasmic reticulum calcium ATPase 1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	995	7674	4878	1287	1452	57	0	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1A	ACE	-	ACETYLATION	UNP P04191
A	994	GLY	ASP	SEE REMARK 999	UNP P04191

- Molecule 2 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula:  $C_{10}H_{16}N_5O_{13}P_3$ ).



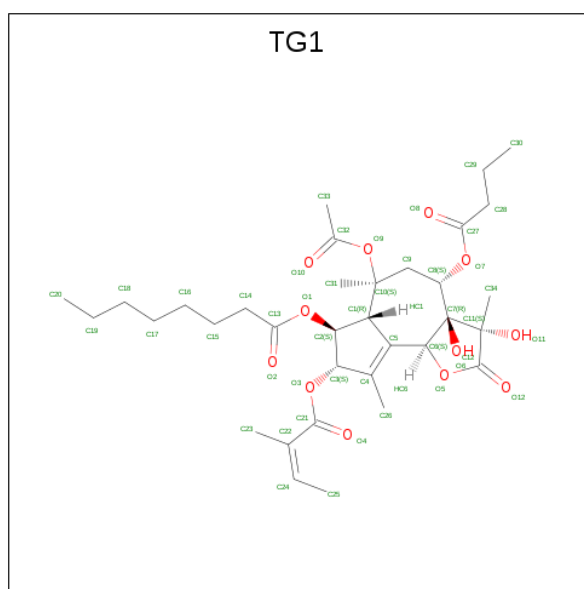
- Molecule 3 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	2	Total	Mg	0	0
			2	2		

- Molecule 4 is SODIUM ION (three-letter code: NA) (formula: Na).

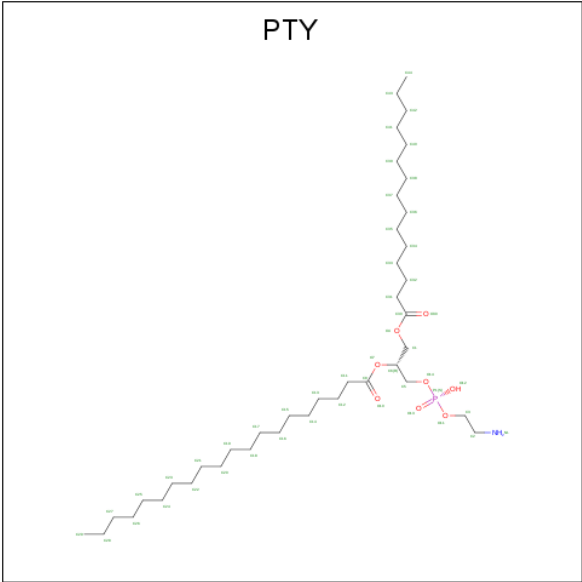
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	1	Total	Na	0	0
			1	1		

- Molecule 5 is OCTANOIC ACID [3S-[3ALPHA, 3ABETA, 4ALPHA, 6BETA, 6ABETA, 7BETA, 8ALPHA(Z), 9BALPHA]]-6-(ACETYLOXY)-2,3,-3A,4,5,6,6A,7,8,9B-DECAHYDRO-3,3A-DIHYDROXY-3,6,9-TRIMETHYL-8-[(2-METHYL-1-OXO-2-BUTENYL)OXY]-2-OXO-4-(1-OXOBUTOXY)-AZULENO[4,5-B]FURAN-7-YL ESTER (three-letter code: TG1) (formula: C<sub>34</sub>H<sub>50</sub>O<sub>12</sub>).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	A	1	Total	C	O	0	0
			46	34	12		

- Molecule 6 is PHOSPHATIDYLETHANOLAMINE (three-letter code: PTY) (formula: C<sub>40</sub>H<sub>80</sub>NO<sub>8</sub>P).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
6	A	1	Total	C	N	O	P	0	0
			19	9	1	8	1		
6	A	1	Total	C	N	O	P	0	0
			19	9	1	8	1		
6	A	1	Total	C	N	O	P	0	0
			19	9	1	8	1		

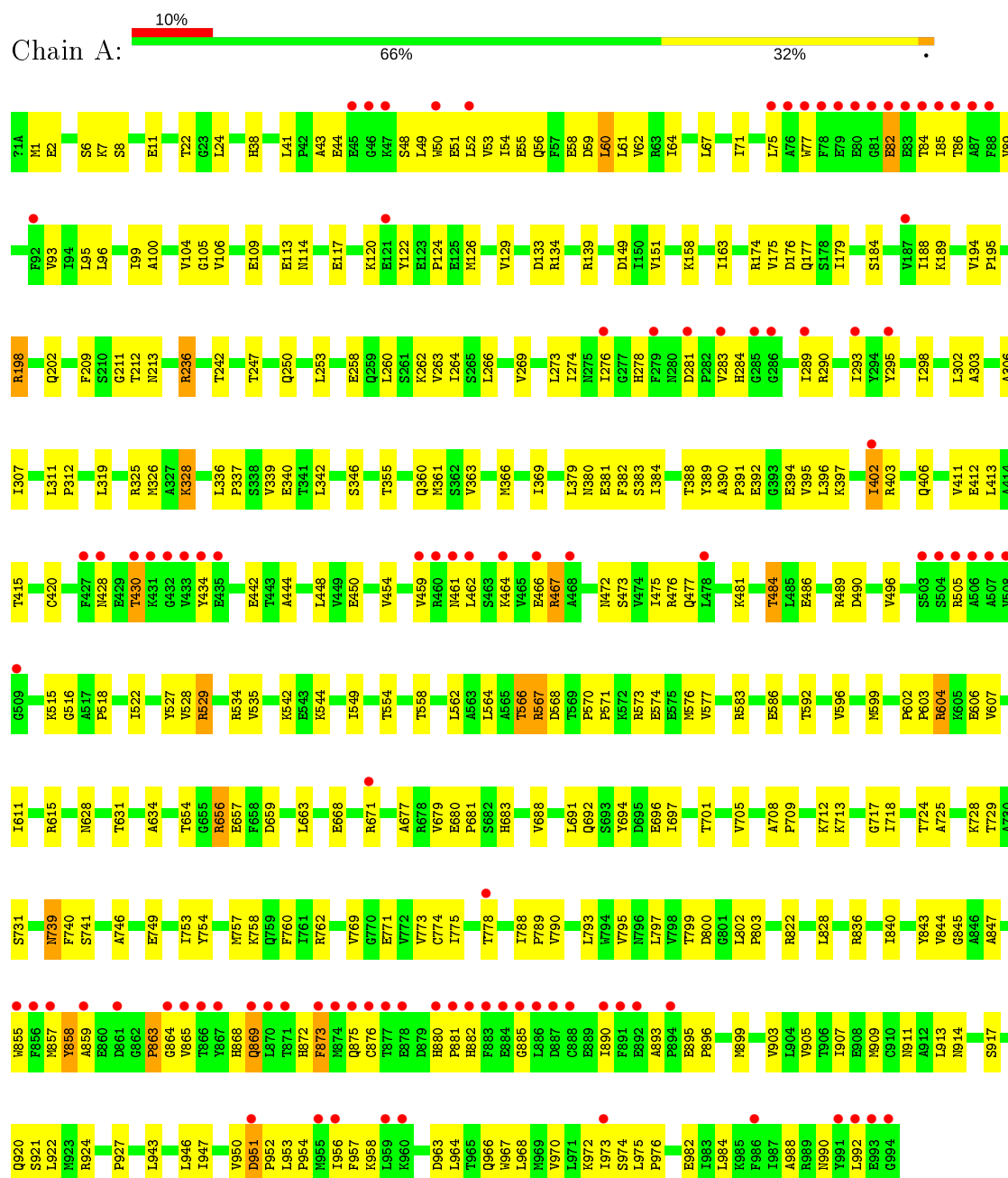
- Molecule 7 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	A	377	Total	O	0	0
			377	377		

### 3 Residue-property plots

These plots are drawn for all protein, RNA and DNA 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: Sarcoplasmic/endoplasmic reticulum calcium ATPase 1



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 41 21 2	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	71.38 Å 71.38 Å 590.69 Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	14.97 – 2.15 51.32 – 2.15	Depositor EDS
% Data completeness (in resolution range)	98.2 (14.97-2.15) 99.4 (51.32-2.15)	Depositor EDS
$R_{merge}$	0.06	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	3.04 (at 2.16 Å)	Xtriage
Refinement program	CNS	Depositor
R, $R_{free}$	0.239 , 0.281 0.231 , 0.268	Depositor DCC
$R_{free}$ test set	4264 reflections (5.02%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	47.6	Xtriage
Anisotropy	0.142	Xtriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.35 , 62.8	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.44$ , $\langle L^2 \rangle = 0.26$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
$F_o, F_c$ correlation	0.94	EDS
Total number of atoms	8188	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	61.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.08% 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: MG, TG1, PTY, ACE, NA, ATP

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	0.34	0/7813	0.58	0/10594

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

### 5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	7674	0	7765	279	0
2	A	31	0	12	3	0
3	A	2	0	0	0	0
4	A	1	0	0	0	0
5	A	46	0	50	2	0
6	A	57	0	33	1	0
7	A	377	0	0	16	0
All	All	8188	0	7860	279	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 18.

All (279) 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:A:328:LYS:NZ	1:A:328:LYS:HA	1.88	0.87
1:A:290:ARG:HH12	1:A:875:GLN:HG2	1.39	0.87
1:A:847:ALA:HA	1:A:973:ILE:HD11	1.59	0.84
1:A:988:ALA:HA	1:A:992:LEU:HD12	1.60	0.84
1:A:567:ARG:HD2	1:A:570:PRO:HA	1.61	0.83
1:A:85:ILE:HG23	1:A:86:THR:HG22	1.61	0.82
1:A:462:LEU:HB3	1:A:466:GLU:HB2	1.63	0.81
1:A:963:ASP:H	1:A:966:GLN:NE2	1.80	0.79
1:A:413:LEU:HD22	1:A:564:LEU:HD12	1.62	0.79
1:A:963:ASP:H	1:A:966:GLN:HE21	1.29	0.78
1:A:679:VAL:HG13	1:A:683:HIS:HB2	1.66	0.78
1:A:273:LEU:HD23	1:A:276:ILE:HD11	1.66	0.77
1:A:739:ASN:HD22	1:A:740:PHE:N	1.85	0.75
1:A:52:LEU:HD11	1:A:109:GLU:HG3	1.68	0.74
1:A:924:ARG:HA	1:A:924:ARG:HE	1.53	0.74
1:A:412:GLU:OE2	1:A:566:THR:HG21	1.88	0.73
1:A:583:ARG:HD2	7:A:2218:HOH:O	1.88	0.72
1:A:179:ILE:O	1:A:705:VAL:HG22	1.90	0.72
1:A:89:VAL:O	1:A:93:VAL:HG23	1.89	0.71
1:A:369:ILE:HG13	1:A:528:VAL:CG1	2.21	0.71
1:A:56:GLN:OE1	1:A:105:GLY:HA3	1.90	0.71
1:A:55:GLU:HA	1:A:58:GLU:HG3	1.73	0.70
1:A:680:GLU:HB2	1:A:683:HIS:CD2	2.26	0.70
1:A:397:LYS:HB2	1:A:402:ILE:HG21	1.74	0.69
1:A:264:ILE:HG23	1:A:302:LEU:HD12	1.75	0.69
1:A:836:ARG:O	1:A:840:ILE:HG12	1.93	0.68
1:A:312:PRO:HG2	7:A:2357:HOH:O	1.93	0.68
1:A:680:GLU:H	1:A:683:HIS:CD2	2.10	0.68
1:A:554:THR:HG21	7:A:2365:HOH:O	1.92	0.68
1:A:680:GLU:H	1:A:683:HIS:HD2	1.41	0.67
1:A:583:ARG:O	1:A:586:GLU:HG2	1.95	0.67
1:A:149:ASP:HB2	7:A:2356:HOH:O	1.94	0.67
1:A:395:VAL:HG12	1:A:402:ILE:HD11	1.77	0.67
1:A:663:LEU:HD12	1:A:663:LEU:H	1.59	0.66
1:A:844:VAL:HG22	1:A:907:ILE:HG21	1.77	0.66
1:A:61:LEU:HD22	1:A:307:ILE:HD12	1.77	0.66
1:A:758:LYS:O	1:A:762:ARG:HG3	1.96	0.66
1:A:604:ARG:HB2	1:A:607:VAL:HG23	1.78	0.65
1:A:174:ARG:NH2	1:A:188:ILE:HD11	2.12	0.65
1:A:968:LEU:O	1:A:972:LYS:HG3	1.97	0.65
1:A:606:GLU:OE1	1:A:606:GLU:N	2.28	0.64
1:A:129:VAL:HG12	1:A:151:VAL:HG12	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:174:ARG:CZ	1:A:188:ILE:HD11	2.28	0.64
1:A:397:LYS:HB2	1:A:402:ILE:CG2	2.26	0.64
1:A:290:ARG:HH22	1:A:875:GLN:HB3	1.63	0.63
1:A:412:GLU:OE1	1:A:529:ARG:HD2	1.98	0.63
1:A:857:MET:O	1:A:864:GLY:HA2	1.98	0.63
1:A:515:LYS:HE3	2:A:1002:ATP:N1	2.15	0.62
1:A:49:LEU:O	1:A:53:VAL:HG23	1.98	0.62
1:A:802:LEU:HB2	1:A:803:PRO:HD3	1.82	0.62
1:A:865:VAL:HB	1:A:868:HIS:HB2	1.81	0.62
1:A:262:LYS:O	1:A:266:LEU:HD23	1.99	0.62
1:A:950:VAL:HG12	1:A:952:PRO:HD2	1.81	0.61
1:A:260:LEU:HD11	1:A:306:ALA:HB1	1.81	0.61
1:A:366:MET:CE	1:A:384:ILE:HD11	2.30	0.61
1:A:176:ASP:O	1:A:212:THR:HG23	1.99	0.61
1:A:395:VAL:O	1:A:396:LEU:HD23	2.00	0.61
1:A:328:LYS:HZ3	1:A:328:LYS:HA	1.65	0.60
1:A:403:ARG:HG2	7:A:2133:HOH:O	2.01	0.60
1:A:402:ILE:H	1:A:402:ILE:HD13	1.65	0.60
1:A:459:VAL:HB	1:A:467:ARG:NE	2.16	0.59
1:A:472:ASN:HB3	1:A:476:ARG:HH12	1.68	0.59
1:A:567:ARG:CD	1:A:570:PRO:HA	2.32	0.59
1:A:873:PHE:CE1	1:A:881:PRO:HG3	2.37	0.59
1:A:529:ARG:CZ	1:A:592:THR:HG21	2.32	0.59
1:A:604:ARG:HH11	1:A:604:ARG:HG3	1.66	0.59
1:A:260:LEU:HD21	1:A:307:ILE:HD13	1.85	0.59
1:A:680:GLU:HB3	1:A:681:PRO:HD2	1.86	0.58
1:A:924:ARG:NE	1:A:924:ARG:HA	2.17	0.58
1:A:247:THR:H	1:A:250:GLN:NE2	2.02	0.58
1:A:554:THR:HG23	7:A:2155:HOH:O	2.03	0.57
1:A:325:ARG:HH12	1:A:753:ILE:HD11	1.68	0.57
1:A:843:TYR:OH	1:A:976:PRO:HG2	2.04	0.57
1:A:527:TYR:CD1	1:A:534:ARG:HD3	2.38	0.57
1:A:654:THR:OG1	1:A:657:GLU:HG3	2.04	0.57
1:A:880:HIS:N	1:A:881:PRO:HD2	2.19	0.57
1:A:668:GLU:OE1	1:A:671:ARG:HD3	2.03	0.57
1:A:413:LEU:CD2	1:A:564:LEU:HD12	2.33	0.57
1:A:283:VAL:HG13	1:A:284:HIS:ND1	2.20	0.56
1:A:328:LYS:HZ2	1:A:328:LYS:HA	1.66	0.56
1:A:383:SER:O	1:A:384:ILE:HD13	2.05	0.56
1:A:325:ARG:NH1	1:A:753:ILE:HD11	2.20	0.56
1:A:262:LYS:NZ	1:A:266:LEU:HD21	2.20	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:52:LEU:CD1	1:A:109:GLU:HG3	2.34	0.55
1:A:881:PRO:HG2	1:A:882:HIS:H	1.71	0.55
1:A:48:SER:OG	1:A:51:GLU:HG3	2.05	0.55
1:A:346:SER:OG	1:A:696:GLU:OE2	2.23	0.55
1:A:769:VAL:HA	5:A:1003:TG1:H231	1.88	0.55
1:A:59:ASP:HB3	1:A:62:VAL:HG22	1.88	0.55
1:A:481:LYS:HD3	1:A:484:THR:HG22	1.89	0.55
1:A:663:LEU:N	1:A:663:LEU:HD12	2.22	0.55
1:A:339:VAL:HG23	1:A:340:GLU:N	2.22	0.55
1:A:52:LEU:HD23	1:A:106:VAL:HG13	1.89	0.55
1:A:869:GLN:HB2	1:A:872:HIS:CD2	2.42	0.55
1:A:567:ARG:HD2	1:A:570:PRO:CA	2.36	0.54
1:A:836:ARG:HG2	1:A:984:LEU:HB3	1.90	0.54
1:A:484:THR:HB	1:A:496:VAL:HG12	1.90	0.54
1:A:865:VAL:HB	1:A:868:HIS:CB	2.37	0.54
1:A:384:ILE:HD12	1:A:395:VAL:HG22	1.90	0.54
1:A:390:ALA:C	1:A:392:GLU:H	2.11	0.54
1:A:921:SER:HB3	1:A:982:GLU:OE1	2.08	0.54
1:A:668:GLU:O	1:A:671:ARG:HG2	2.08	0.54
1:A:739:ASN:C	1:A:739:ASN:HD22	2.12	0.53
1:A:951:ASP:HB2	1:A:952:PRO:HD3	1.90	0.53
1:A:411:VAL:HG22	1:A:454:VAL:HB	1.90	0.53
1:A:604:ARG:HG3	7:A:2033:HOH:O	2.07	0.53
1:A:289:ILE:O	1:A:293:ILE:HG13	2.08	0.53
1:A:459:VAL:HB	1:A:467:ARG:CD	2.39	0.53
1:A:60:LEU:HD12	1:A:258:GLU:OE1	2.08	0.53
1:A:899:MET:O	1:A:903:VAL:HG23	2.08	0.53
1:A:184:SER:HB2	7:A:2194:HOH:O	2.08	0.53
1:A:61:LEU:HD22	1:A:307:ILE:CD1	2.38	0.53
1:A:663:LEU:CD1	1:A:663:LEU:H	2.21	0.52
1:A:325:ARG:HH12	1:A:753:ILE:CD1	2.23	0.52
1:A:762:ARG:HD3	1:A:828:LEU:O	2.09	0.52
1:A:8:SER:OG	1:A:11:GLU:HG3	2.09	0.52
1:A:38:HIS:HE1	7:A:2386:HOH:O	1.93	0.52
1:A:311:LEU:N	1:A:312:PRO:HD2	2.24	0.52
1:A:361:MET:HB3	1:A:444:ALA:HB2	1.91	0.52
1:A:472:ASN:HB3	1:A:476:ARG:NH1	2.24	0.52
1:A:654:THR:HA	1:A:677:ALA:O	2.08	0.52
1:A:336:LEU:HB2	1:A:337:PRO:HD3	1.91	0.52
1:A:195:PRO:HA	7:A:2369:HOH:O	2.07	0.52
1:A:534:ARG:HG2	1:A:535:VAL:N	2.25	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:893:ALA:HB1	1:A:895:GLU:OE1	2.09	0.52
1:A:298:ILE:O	1:A:302:LEU:HB2	2.10	0.51
1:A:974:SER:C	1:A:976:PRO:HD2	2.31	0.51
1:A:749:GLU:O	1:A:753:ILE:HG12	2.11	0.51
1:A:24:LEU:HD12	1:A:149:ASP:HB3	1.93	0.51
1:A:975:LEU:N	1:A:976:PRO:HD2	2.26	0.51
1:A:212:THR:HG22	1:A:213:ASN:N	2.25	0.51
1:A:379:LEU:HD11	1:A:544:LYS:HD2	1.93	0.51
1:A:757:MET:HA	1:A:760:PHE:CE2	2.45	0.51
1:A:122:TYR:O	1:A:211:GLY:HA2	2.10	0.50
1:A:964:LEU:O	1:A:968:LEU:HD13	2.11	0.50
1:A:262:LYS:HZ3	1:A:266:LEU:HD21	1.76	0.50
1:A:771:GLU:O	1:A:775:ILE:HG12	2.12	0.50
1:A:236:ARG:HD3	1:A:236:ARG:C	2.31	0.50
1:A:263:VAL:HG11	5:A:1003:TG1:O4	2.12	0.50
1:A:604:ARG:HH11	1:A:604:ARG:CG	2.23	0.50
1:A:82:GLU:C	1:A:84:THR:H	2.14	0.50
1:A:895:GLU:N	1:A:896:PRO:HD2	2.26	0.50
1:A:303:ALA:O	1:A:307:ILE:HG12	2.11	0.50
1:A:656:ARG:HG2	1:A:656:ARG:HH11	1.76	0.50
1:A:381:GLU:HG2	7:A:2371:HOH:O	2.12	0.50
1:A:361:MET:HG2	1:A:599:MET:SD	2.52	0.50
1:A:450:GLU:OE2	1:A:450:GLU:HA	2.11	0.50
1:A:273:LEU:HA	1:A:276:ILE:HG13	1.94	0.49
1:A:943:LEU:O	1:A:946:LEU:HB3	2.12	0.49
1:A:428:ASN:OD1	1:A:430:THR:HB	2.12	0.49
1:A:355:THR:HG22	1:A:740:PHE:HB2	1.93	0.49
1:A:175:VAL:CG1	1:A:212:THR:CG2	2.90	0.49
1:A:212:THR:CG2	1:A:213:ASN:N	2.76	0.49
1:A:242:THR:O	1:A:712:LYS:NZ	2.45	0.49
1:A:847:ALA:CA	1:A:973:ILE:HD11	2.37	0.49
1:A:571:PRO:HG2	1:A:576:MET:SD	2.53	0.49
1:A:198:ARG:HD3	1:A:198:ARG:O	2.13	0.49
1:A:680:GLU:N	1:A:683:HIS:CD2	2.80	0.49
1:A:701:THR:HA	1:A:718:ILE:O	2.13	0.49
1:A:947:ILE:HG22	1:A:953:LEU:HD13	1.94	0.49
1:A:366:MET:HE2	1:A:384:ILE:HD11	1.94	0.48
1:A:911:ASN:HA	1:A:914:ASN:HD22	1.77	0.48
1:A:659:ASP:OD1	1:A:683:HIS:HE1	1.96	0.48
1:A:739:ASN:ND2	1:A:741:SER:H	2.10	0.48
1:A:793:LEU:O	1:A:797:LEU:HD13	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:869:GLN:HB2	1:A:872:HIS:HD2	1.77	0.48
1:A:473:SER:O	1:A:477:GLN:HG2	2.14	0.48
1:A:202:GLN:OE1	1:A:489:ARG:HD3	2.14	0.48
1:A:688:VAL:O	1:A:692:GLN:HG3	2.12	0.48
1:A:905:VAL:O	1:A:909:MET:HG2	2.13	0.48
1:A:363:VAL:HG11	1:A:448:LEU:HD22	1.95	0.48
1:A:50:TRP:O	1:A:54:ILE:HG12	2.14	0.48
1:A:577:VAL:HG23	1:A:583:ARG:NH1	2.29	0.48
1:A:754:TYR:HD1	1:A:757:MET:HE3	1.79	0.48
1:A:151:VAL:HG21	1:A:163:ILE:CD1	2.44	0.48
1:A:328:LYS:CE	1:A:328:LYS:HA	2.43	0.48
1:A:573:ARG:HG3	7:A:2137:HOH:O	2.14	0.47
1:A:60:LEU:O	1:A:64:ILE:HG12	2.14	0.47
1:A:522:ILE:HG22	1:A:542:LYS:HE3	1.96	0.47
1:A:342:LEU:HD21	1:A:746:ALA:HB1	1.95	0.47
1:A:403:ARG:HB3	1:A:406:GLN:HG3	1.96	0.47
1:A:952:PRO:O	1:A:956:ILE:HG13	2.14	0.47
1:A:366:MET:HE1	1:A:384:ILE:HD11	1.96	0.47
1:A:573:ARG:HG2	1:A:573:ARG:HH11	1.80	0.47
1:A:656:ARG:NH1	1:A:656:ARG:HG2	2.29	0.47
1:A:278:HIS:HA	1:A:281:ASP:OD2	2.14	0.47
1:A:680:GLU:N	1:A:683:HIS:HD2	2.11	0.47
1:A:880:HIS:H	1:A:881:PRO:HD2	1.78	0.47
1:A:882:HIS:NE2	1:A:885:GLY:HA3	2.30	0.47
1:A:260:LEU:CD2	1:A:307:ILE:HD13	2.44	0.47
1:A:534:ARG:NH2	1:A:568:ASP:HB2	2.30	0.47
1:A:863:PRO:C	1:A:865:VAL:H	2.18	0.46
1:A:515:LYS:HE3	2:A:1002:ATP:C2	2.50	0.46
1:A:725:ALA:O	1:A:729:THR:HG23	2.15	0.46
1:A:1:MET:CE	1:A:7:LYS:HG3	2.44	0.46
1:A:366:MET:HA	1:A:596:VAL:O	2.16	0.46
1:A:402:ILE:N	1:A:402:ILE:HD13	2.30	0.46
1:A:71:ILE:O	1:A:75:LEU:HD13	2.16	0.46
1:A:913:LEU:HD22	1:A:927:PRO:HB3	1.98	0.46
1:A:175:VAL:CG1	1:A:212:THR:HG21	2.44	0.46
1:A:273:LEU:HA	1:A:276:ILE:HD11	1.98	0.46
1:A:534:ARG:HH21	1:A:568:ASP:CB	2.28	0.46
1:A:858:TYR:CD1	1:A:858:TYR:N	2.84	0.46
1:A:442:GLU:OE2	1:A:515:LYS:NZ	2.49	0.46
1:A:671:ARG:HB3	1:A:694:TYR:CE2	2.50	0.46
1:A:95:LEU:HD22	1:A:99:ILE:HD11	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:346:SER:HB3	1:A:697:ILE:H	1.80	0.45
1:A:295:TYR:O	1:A:298:ILE:HG12	2.17	0.45
1:A:890:ILE:C	1:A:890:ILE:HD12	2.37	0.45
1:A:574:GLU:CD	1:A:574:GLU:H	2.19	0.45
1:A:274:ILE:HG22	1:A:274:ILE:O	2.14	0.45
1:A:604:ARG:HB2	1:A:607:VAL:CG2	2.46	0.45
1:A:895:GLU:CD	1:A:895:GLU:H	2.19	0.45
1:A:149:ASP:CB	7:A:2356:HOH:O	2.60	0.45
1:A:602:PRO:HA	1:A:603:PRO:HD3	1.80	0.45
1:A:534:ARG:HH21	1:A:568:ASP:HB2	1.82	0.44
1:A:516:GLY:HA2	2:A:1002:ATP:N3	2.33	0.44
1:A:43:ALA:HA	1:A:120:LYS:NZ	2.32	0.44
1:A:124:PRO:HB3	1:A:158:LYS:HB3	1.99	0.44
1:A:420:CYS:SG	1:A:515:LYS:HE2	2.58	0.44
1:A:151:VAL:HG21	1:A:163:ILE:HD13	1.99	0.44
1:A:114:ASN:OD1	1:A:117:GLU:HG2	2.17	0.44
1:A:209:PHE:O	1:A:212:THR:HB	2.18	0.44
1:A:611:ILE:O	1:A:615:ARG:HG3	2.18	0.44
1:A:967:TRP:O	1:A:970:VAL:HB	2.17	0.44
1:A:604:ARG:NH1	1:A:604:ARG:CG	2.79	0.43
1:A:52:LEU:CD2	1:A:106:VAL:HG13	2.49	0.43
1:A:2:GLU:HG3	7:A:2291:HOH:O	2.19	0.43
1:A:380:ASN:HD22	1:A:382:PHE:HZ	1.66	0.43
1:A:688:VAL:HG11	1:A:713:LYS:HG2	2.01	0.43
1:A:126:MET:CE	1:A:139:ARG:HD3	2.49	0.43
1:A:325:ARG:HD2	1:A:749:GLU:OE2	2.19	0.43
1:A:628:ASN:ND2	1:A:631:THR:H	2.17	0.43
1:A:855:TRP:HA	1:A:859:ALA:CB	2.49	0.43
1:A:788:ILE:HD13	1:A:958:LYS:HD2	2.01	0.43
1:A:67:LEU:O	1:A:67:LEU:HD12	2.19	0.43
1:A:795:VAL:HA	1:A:799:THR:HB	2.01	0.43
1:A:96:LEU:HD23	1:A:96:LEU:C	2.39	0.43
1:A:369:ILE:HG13	1:A:528:VAL:HG11	1.99	0.43
1:A:133:ASP:O	1:A:134:ARG:HG3	2.19	0.42
1:A:75:LEU:C	1:A:77:TRP:H	2.22	0.42
1:A:388:THR:OG1	1:A:389:TYR:N	2.52	0.42
1:A:6:SER:HA	1:A:194:VAL:O	2.20	0.42
1:A:273:LEU:HA	1:A:276:ILE:CG1	2.48	0.42
1:A:922:LEU:HD22	1:A:927:PRO:HG3	2.02	0.42
1:A:990:ASN:HD21	6:A:1012:PTY:C2	2.32	0.42
1:A:724:THR:O	1:A:728:LYS:HG3	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:100:ALA:O	1:A:104:VAL:HG23	2.20	0.42
1:A:43:ALA:HA	1:A:120:LYS:HZ1	1.85	0.42
1:A:558:THR:HG22	1:A:634:ALA:HB1	2.01	0.42
1:A:273:LEU:HA	1:A:276:ILE:CD1	2.50	0.42
1:A:326:MET:HG2	1:A:749:GLU:HG2	2.01	0.42
1:A:360:GLN:HB2	7:A:2237:HOH:O	2.20	0.42
1:A:988:ALA:O	1:A:992:LEU:HB2	2.19	0.42
1:A:607:VAL:O	1:A:611:ILE:HG12	2.19	0.41
1:A:708:ALA:HB3	1:A:709:PRO:HD3	2.02	0.41
1:A:917:SER:OG	1:A:920:GLN:HB2	2.20	0.41
1:A:459:VAL:C	1:A:461:ASN:H	2.23	0.41
1:A:800:ASP:C	1:A:803:PRO:HD2	2.41	0.41
1:A:950:VAL:O	1:A:954:PRO:HD2	2.20	0.41
1:A:415:THR:HA	1:A:475:ILE:HG21	2.01	0.41
1:A:434:TYR:HE1	1:A:464:LYS:HE3	1.86	0.41
1:A:790:VAL:HG12	1:A:957:PHE:CD1	2.56	0.41
1:A:950:VAL:O	1:A:952:PRO:HD2	2.20	0.41
1:A:554:THR:HG22	1:A:554:THR:O	2.20	0.41
1:A:573:ARG:NH1	1:A:573:ARG:HG2	2.36	0.41
1:A:175:VAL:HG12	1:A:177:GLN:HG3	2.02	0.41
1:A:269:VAL:O	1:A:273:LEU:HG	2.20	0.41
1:A:336:LEU:O	1:A:339:VAL:HG22	2.21	0.41
1:A:290:ARG:NH2	1:A:875:GLN:HB3	2.33	0.41
1:A:361:MET:CG	1:A:599:MET:SD	3.08	0.40
1:A:382:PHE:CD1	1:A:382:PHE:N	2.89	0.40
1:A:773:VAL:CG1	1:A:845:GLY:HA3	2.51	0.40
1:A:406:GLN:HG2	7:A:2224:HOH:O	2.22	0.40
1:A:41:LEU:HD13	1:A:236:ARG:HG3	2.04	0.40
1:A:529:ARG:HH21	1:A:534:ARG:HB2	1.86	0.40
1:A:518:PRO:HB3	1:A:549:ILE:HD13	2.02	0.40
1:A:774:CYS:O	1:A:778:THR:HG22	2.21	0.40
1:A:717:GLY:O	1:A:731:SER:HB2	2.22	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles

### 5.3.1 Protein backbone

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

of similar resolution.

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	993/995 (100%)	932 (94%)	54 (5%)	7 (1%)	22	15

All (7) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	951	ASP
1	A	858	TYR
1	A	869	GLN
1	A	505	ARG
1	A	430	THR
1	A	863	PRO
1	A	391	PRO

### 5.3.2 Protein sidechains ⓘ

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	840/840 (100%)	811 (96%)	29 (4%)	36	34

All (29) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	22	THR
1	A	44	GLU
1	A	60	LEU
1	A	82	GLU
1	A	113	GLU
1	A	189	LYS
1	A	198	ARG
1	A	236	ARG
1	A	253	LEU
1	A	319	LEU

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Mol	Chain	Res	Type
1	A	328	LYS
1	A	394	GLU
1	A	402	ILE
1	A	467	ARG
1	A	484	THR
1	A	486	GLU
1	A	490	ASP
1	A	529	ARG
1	A	562	LEU
1	A	566	THR
1	A	567	ARG
1	A	604	ARG
1	A	656	ARG
1	A	691	LEU
1	A	739	ASN
1	A	789	PRO
1	A	822	ARG
1	A	873	PHE
1	A	876	CYS

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (14) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	111	ASN
1	A	138	GLN
1	A	250	GLN
1	A	275	ASN
1	A	359	ASN
1	A	461	ASN
1	A	472	ASN
1	A	510	ASN
1	A	628	ASN
1	A	683	HIS
1	A	739	ASN
1	A	914	ASN
1	A	919	ASN
1	A	966	GLN

### 5.3.3 RNA ⓘ

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 carbohydrates in this entry.

## 5.6 Ligand geometry [i](#)

Of 8 ligands modelled in this entry, 3 are monoatomic - leaving 5 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z  > 2$	Counts	RMSZ	$\# Z  > 2$
5	TG1	A	1003	-	43,48,48	1.70	14 (32%)	44,72,72	1.70	10 (22%)
6	PTY	A	1012	-	18,18,49	1.32	3 (16%)	21,23,54	1.47	4 (19%)
6	PTY	A	1011	-	18,18,49	1.28	3 (16%)	21,23,54	1.14	2 (9%)
2	ATP	A	1002	3	26,33,33	1.38	2 (7%)	31,52,52	1.31	4 (12%)
6	PTY	A	1013	-	18,18,49	1.25	3 (16%)	21,23,54	1.30	3 (14%)

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
5	TG1	A	1003	-	-	11/33/99/99	0/3/3/3
6	PTY	A	1012	-	-	8/20/20/53	-
6	PTY	A	1011	-	-	6/20/20/53	-
2	ATP	A	1002	3	-	1/18/38/38	0/3/3/3
6	PTY	A	1013	-	-	11/20/20/53	-

All (25) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	1002	ATP	C4-N3	4.01	1.41	1.35
5	A	1003	TG1	O4-C21	3.88	1.29	1.21
5	A	1003	TG1	C3-C4	3.58	1.55	1.50
5	A	1003	TG1	C34-C11	3.53	1.58	1.53
2	A	1002	ATP	C2-N1	3.48	1.40	1.33
5	A	1003	TG1	C1-C2	3.44	1.60	1.54
5	A	1003	TG1	C1-C5	2.96	1.56	1.51
6	A	1012	PTY	C1-C6	2.92	1.59	1.50
6	A	1011	PTY	C1-C6	2.84	1.59	1.50
5	A	1003	TG1	C9-C10	2.83	1.59	1.54
5	A	1003	TG1	C11-C7	2.70	1.59	1.55
6	A	1013	PTY	C1-C6	2.53	1.58	1.50
5	A	1003	TG1	O7-C27	2.35	1.40	1.34
6	A	1013	PTY	P1-O13	2.34	1.59	1.50
6	A	1013	PTY	C5-C6	2.33	1.57	1.50
6	A	1011	PTY	P1-O13	2.30	1.59	1.50
5	A	1003	TG1	O1-C13	2.27	1.40	1.34
6	A	1012	PTY	C5-C6	2.26	1.57	1.50
5	A	1003	TG1	C31-C10	2.23	1.57	1.52
5	A	1003	TG1	C2-C3	2.21	1.57	1.53
6	A	1012	PTY	P1-O13	2.20	1.58	1.50
6	A	1011	PTY	C5-C6	2.15	1.57	1.50
5	A	1003	TG1	C4-C5	2.13	1.36	1.34
5	A	1003	TG1	C9-C8	2.12	1.55	1.52
5	A	1003	TG1	O6-C7	2.05	1.46	1.43

All (23) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	A	1003	TG1	C10-O9-C32	5.62	134.87	121.53
5	A	1003	TG1	O12-C12-C11	-3.74	124.52	128.28
6	A	1013	PTY	O7-C8-C11	3.66	117.83	111.09
6	A	1012	PTY	O12-P1-O13	-3.42	95.33	112.24
2	A	1002	ATP	PB-O3B-PG	-3.37	121.28	132.83
6	A	1011	PTY	O7-C8-C11	3.29	117.14	111.09
5	A	1003	TG1	O7-C8-C9	3.18	112.32	106.63
2	A	1002	ATP	PA-O3A-PB	-3.06	122.33	132.83
6	A	1012	PTY	O7-C8-C11	2.99	116.60	111.09
5	A	1003	TG1	O5-C12-O12	2.79	125.31	121.62
5	A	1003	TG1	C7-C6-C5	2.76	122.47	115.41
5	A	1003	TG1	O3-C21-O4	2.75	128.56	123.32
5	A	1003	TG1	C24-C22-C21	2.55	130.85	120.78
2	A	1002	ATP	N3-C2-N1	-2.44	124.86	128.68

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	A	1011	PTY	O4-C1-C6	2.37	115.34	108.43
6	A	1012	PTY	O4-C1-C6	2.33	115.23	108.43
5	A	1003	TG1	C23-C22-C21	-2.30	110.33	116.09
5	A	1003	TG1	O4-C21-C22	-2.22	118.23	125.21
5	A	1003	TG1	C11-C7-C6	-2.21	98.77	103.03
6	A	1013	PTY	P1-O14-C5	2.18	134.46	121.68
6	A	1012	PTY	O14-P1-O13	2.15	117.46	109.07
6	A	1013	PTY	O4-C1-C6	2.09	114.52	108.43
2	A	1002	ATP	C4-C5-N7	2.08	111.57	109.40

There are no chirality outliers.

All (37) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	A	1011	PTY	N1-C2-C3-O11
6	A	1011	PTY	C11-C8-O7-C6
6	A	1013	PTY	N1-C2-C3-O11
6	A	1013	PTY	C5-O14-P1-O12
6	A	1013	PTY	C5-O14-P1-O13
5	A	1003	TG1	O3-C21-C22-C23
6	A	1013	PTY	C11-C8-O7-C6
6	A	1012	PTY	C11-C8-O7-C6
6	A	1011	PTY	O10-C8-O7-C6
6	A	1011	PTY	C31-C30-O4-C1
6	A	1013	PTY	C31-C30-O4-C1
6	A	1012	PTY	C31-C30-O4-C1
6	A	1013	PTY	O10-C8-O7-C6
6	A	1012	PTY	O10-C8-O7-C6
6	A	1011	PTY	O30-C30-O4-C1
6	A	1013	PTY	O30-C30-O4-C1
6	A	1012	PTY	O30-C30-O4-C1
5	A	1003	TG1	O3-C21-C22-C24
6	A	1013	PTY	C5-O14-P1-O11
5	A	1003	TG1	O4-C21-C22-C23
5	A	1003	TG1	C15-C16-C17-C18
5	A	1003	TG1	C17-C18-C19-C20
6	A	1013	PTY	O4-C1-C6-O7
2	A	1002	ATP	PA-O3A-PB-O1B
6	A	1012	PTY	C5-O14-P1-O12
6	A	1011	PTY	C3-O11-P1-O14
6	A	1013	PTY	C3-O11-P1-O14
6	A	1012	PTY	C3-O11-P1-O14

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Mol	Chain	Res	Type	Atoms
6	A	1013	PTY	O4-C1-C6-C5
5	A	1003	TG1	O4-C21-C22-C24
6	A	1012	PTY	O14-C5-C6-O7
5	A	1003	TG1	C22-C21-O3-C3
5	A	1003	TG1	C9-C10-O9-C32
5	A	1003	TG1	O1-C13-C14-C15
6	A	1012	PTY	C2-C3-O11-P1
5	A	1003	TG1	O2-C13-C14-C15
5	A	1003	TG1	O7-C27-C28-C29

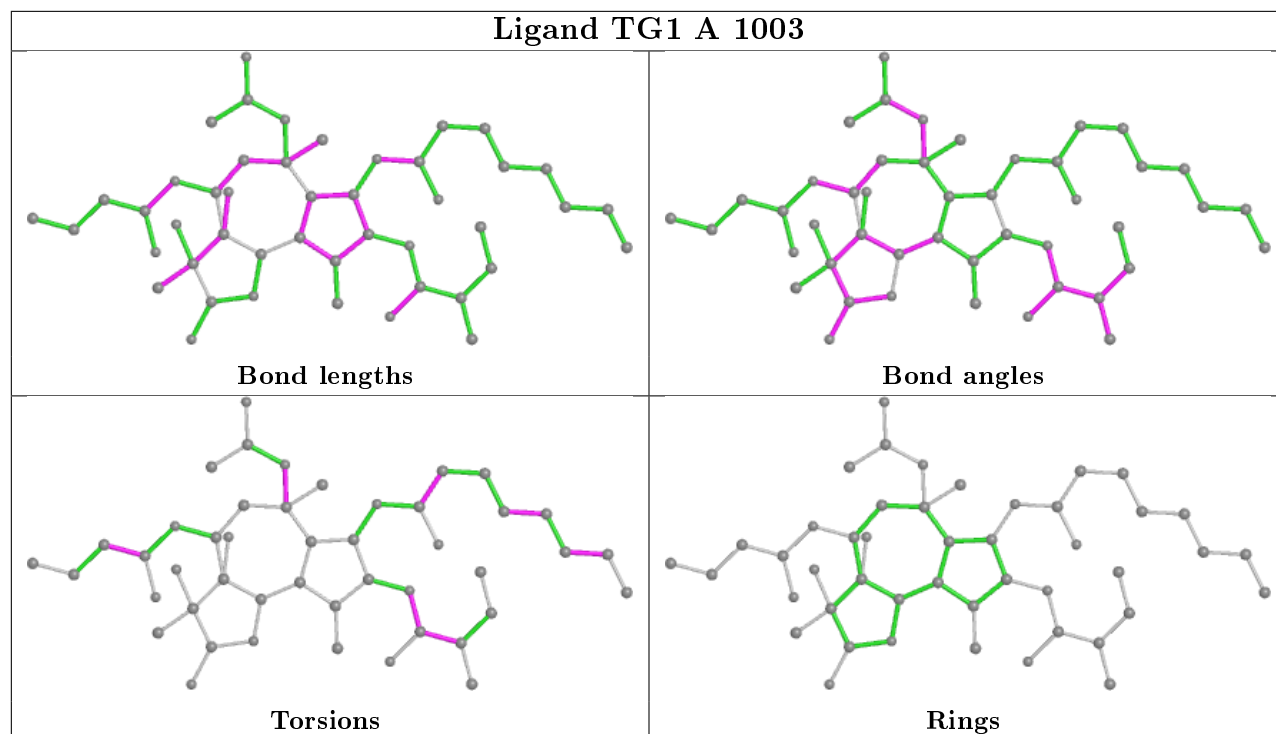
There are no ring outliers.

3 monomers are involved in 6 short contacts:

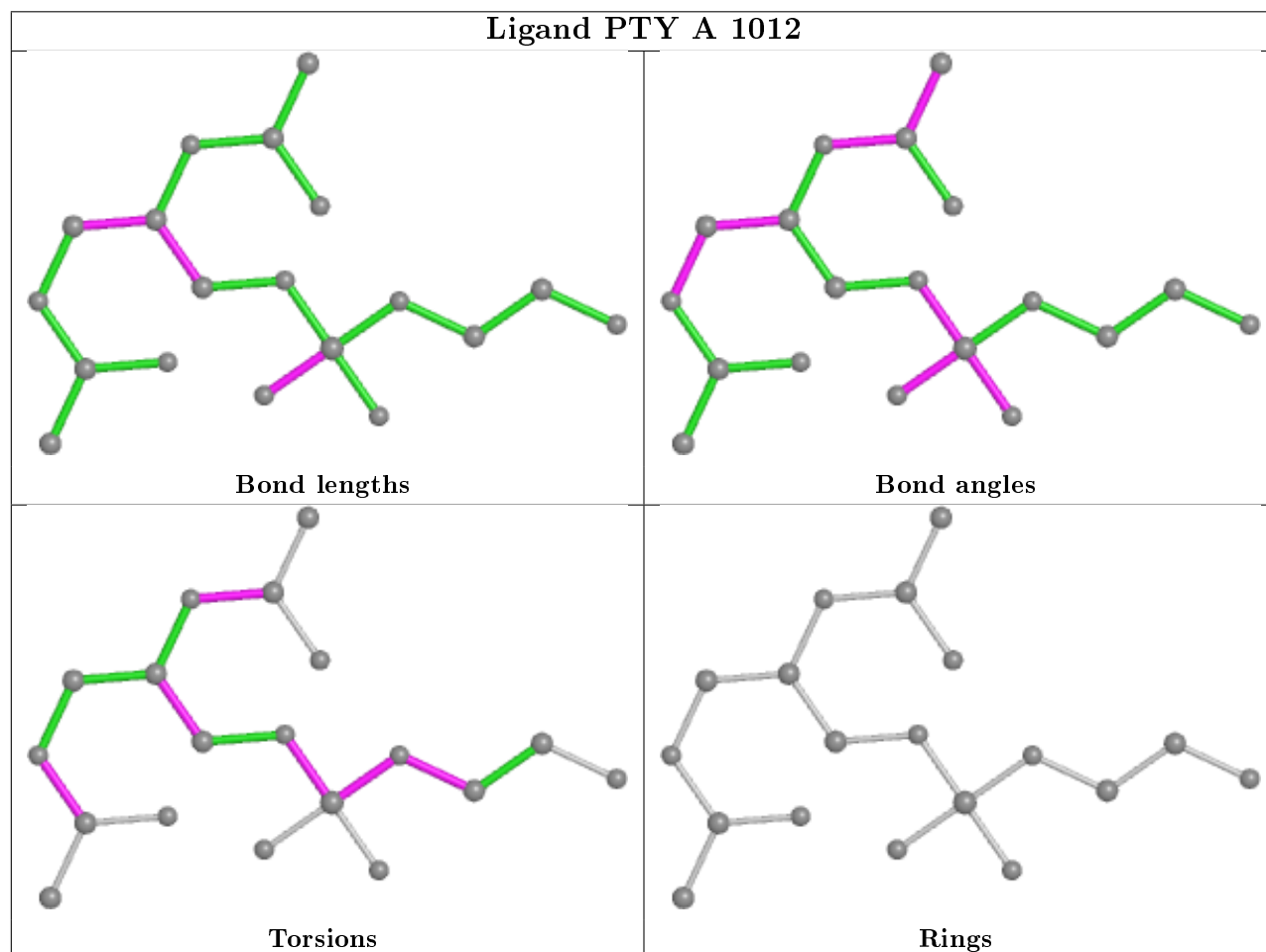
Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	A	1003	TG1	2	0
6	A	1012	PTY	1	0
2	A	1002	ATP	3	0

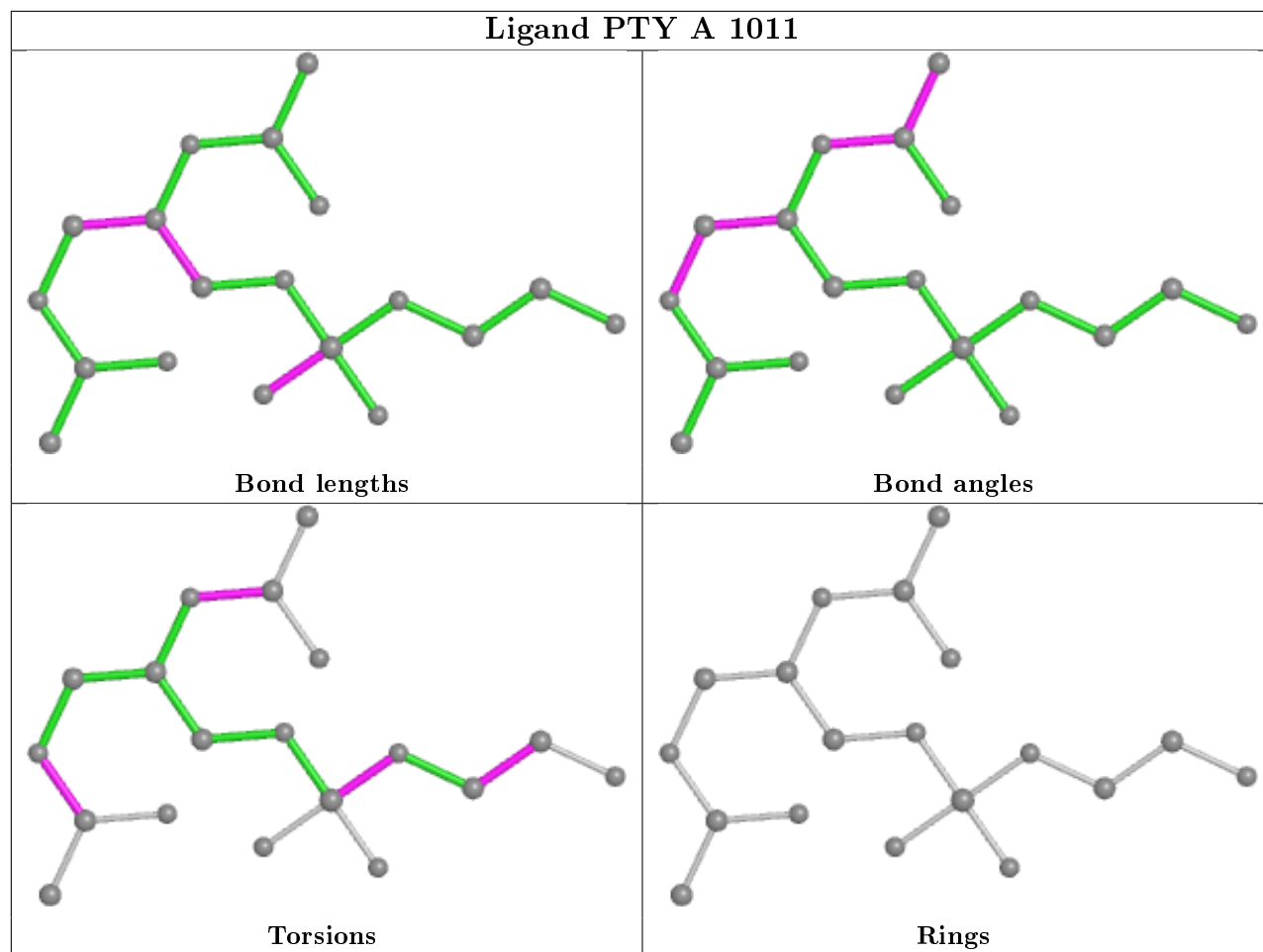
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

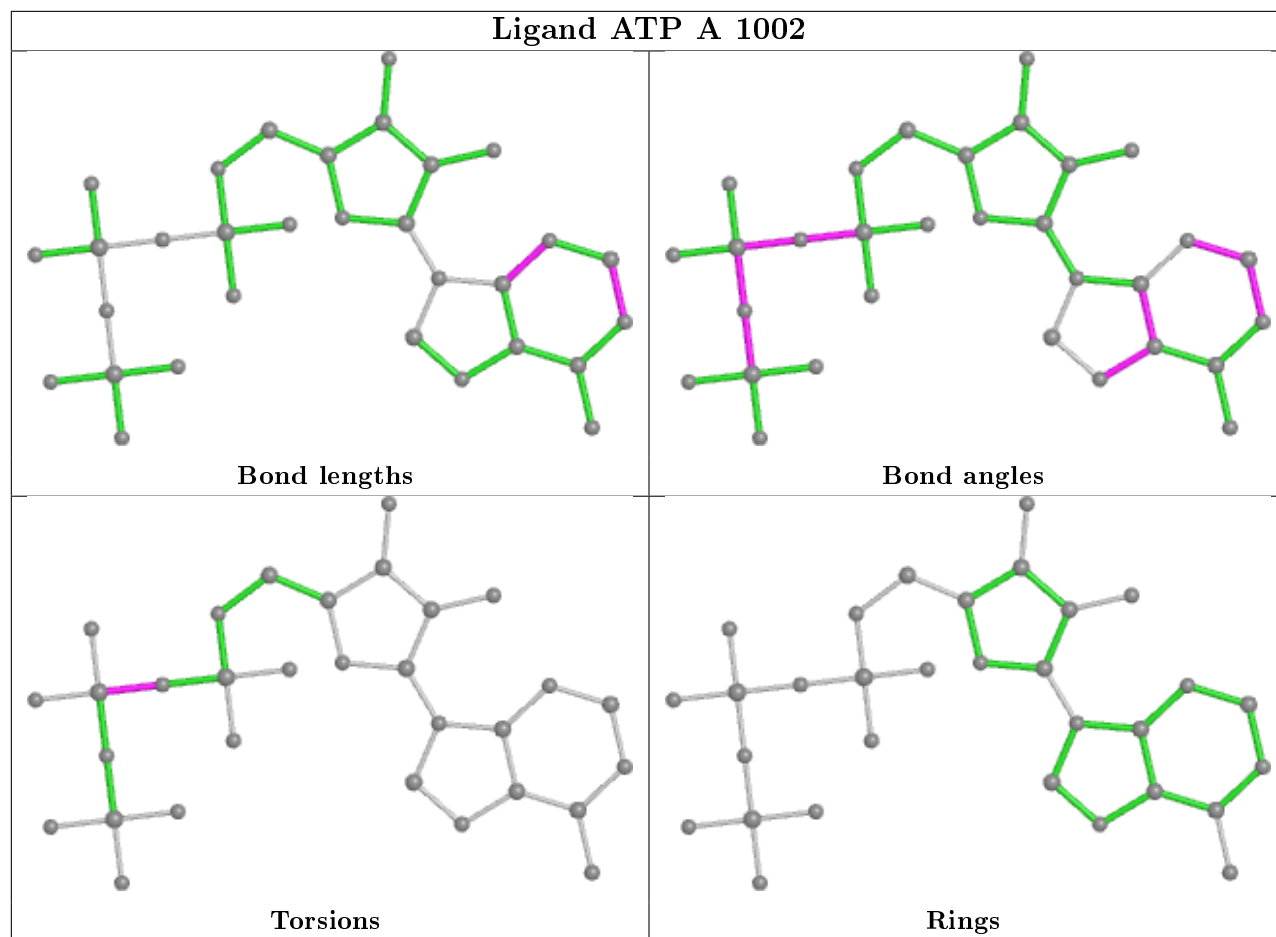
## Ligand TG1 A 1003



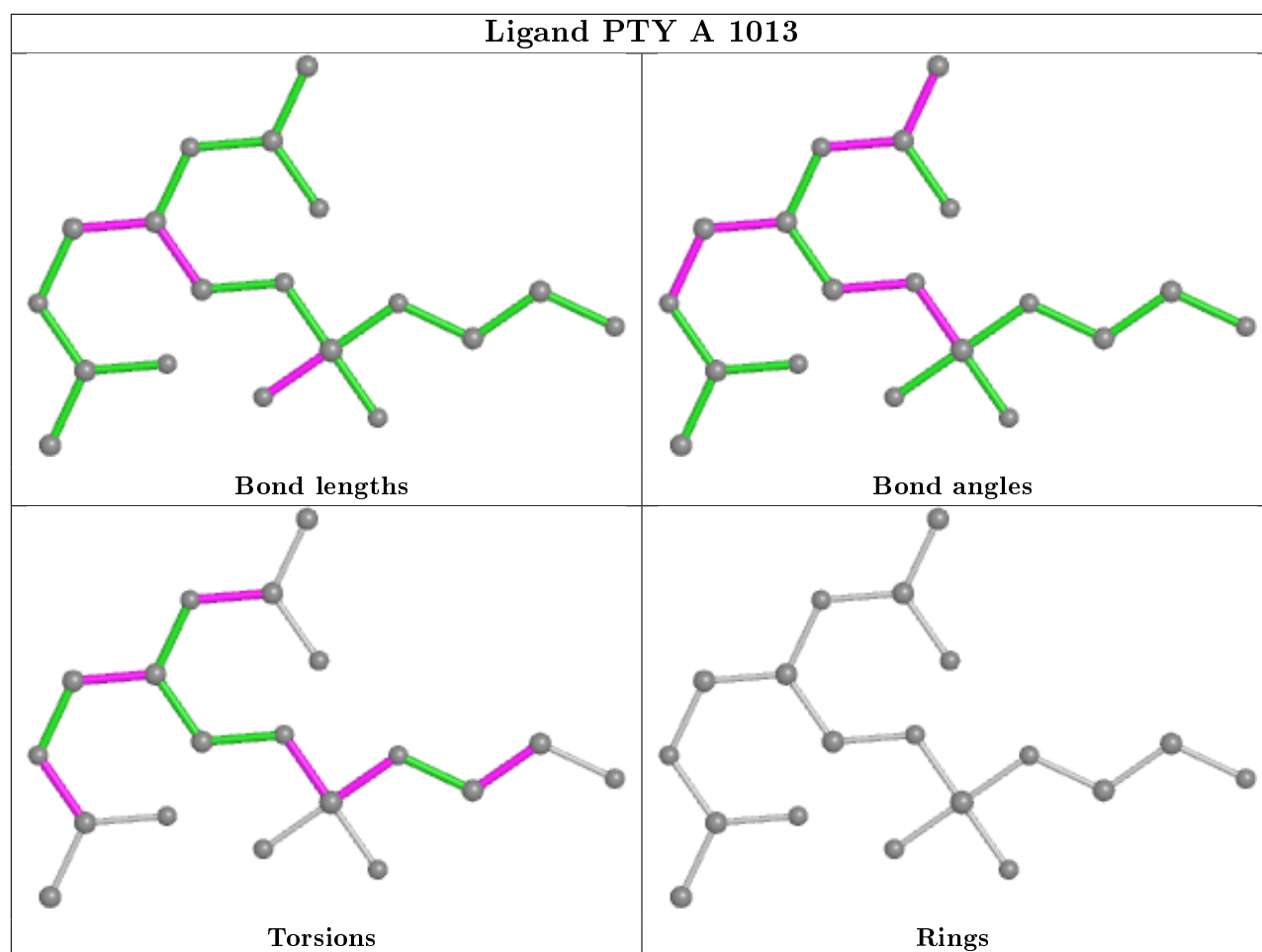
## Ligand PTY A 1012











## 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	994/995 (99%)	0.71	99 (9%) <b>7</b> <b>11</b>	28, 55, 107, 152	0

All (99) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	85	ILE	14.1
1	A	883	PHE	12.1
1	A	886	LEU	11.9
1	A	506	ALA	11.5
1	A	507	ALA	11.2
1	A	508	VAL	10.4
1	A	81	GLY	9.7
1	A	80	GLU	9.6
1	A	504	SER	9.1
1	A	84	THR	8.9
1	A	994	GLY	8.2
1	A	78	PHE	8.1
1	A	993	GLU	8.1
1	A	505	ARG	7.9
1	A	885	GLY	7.9
1	A	82	GLU	7.6
1	A	503	SER	6.9
1	A	877	THR	6.6
1	A	866	THR	6.5
1	A	462	LEU	5.8
1	A	46	GLY	5.7
1	A	992	LEU	5.7
1	A	289	ILE	5.7
1	A	86	THR	5.5
1	A	884	GLU	5.4
1	A	873	PHE	5.3
1	A	890	ILE	5.3

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Mol	Chain	Res	Type	RSRZ
1	A	864	GLY	5.0
1	A	875	GLN	5.0
1	A	856	PHE	4.7
1	A	433	VAL	4.6
1	A	77	TRP	4.5
1	A	865	VAL	4.5
1	A	887	ASP	4.5
1	A	464	LYS	4.5
1	A	76	ALA	4.3
1	A	286	GLY	4.3
1	A	459	VAL	4.3
1	A	285	GLY	4.2
1	A	79	GLU	4.2
1	A	461	ASN	4.2
1	A	881	PRO	4.0
1	A	870	LEU	3.9
1	A	891	PHE	3.9
1	A	295	TYR	3.9
1	A	293	ILE	3.9
1	A	52	LEU	3.8
1	A	888	CYS	3.8
1	A	92	PHE	3.7
1	A	855	TRP	3.7
1	A	430	THR	3.7
1	A	960	LYS	3.6
1	A	951	ASP	3.5
1	A	434	TYR	3.4
1	A	955	MET	3.4
1	A	83	GLU	3.3
1	A	861	ASP	3.3
1	A	432	GLY	3.3
1	A	894	PRO	3.2
1	A	991	TYR	3.2
1	A	431	LYS	3.2
1	A	468	ALA	3.1
1	A	427	PHE	3.1
1	A	959	LEU	3.1
1	A	435	GLU	3.0
1	A	867	TYR	3.0
1	A	428	ASN	3.0
1	A	402	ILE	2.9
1	A	874	MET	2.9

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Mol	Chain	Res	Type	RSRZ
1	A	859	ALA	2.9
1	A	466	GLU	2.8
1	A	857	MET	2.8
1	A	880	HIS	2.8
1	A	871	THR	2.7
1	A	876	CYS	2.6
1	A	671	ARG	2.5
1	A	478	LEU	2.5
1	A	973	ILE	2.5
1	A	279	PHE	2.5
1	A	882	HIS	2.5
1	A	986	PHE	2.5
1	A	878	GLU	2.4
1	A	869	GLN	2.4
1	A	281	ASP	2.4
1	A	45	GLU	2.3
1	A	778	THR	2.3
1	A	50	TRP	2.3
1	A	276	ILE	2.3
1	A	892	GLU	2.3
1	A	88	PHE	2.3
1	A	460	ARG	2.2
1	A	187	VAL	2.2
1	A	283	VAL	2.2
1	A	47	LYS	2.2
1	A	121	GLU	2.1
1	A	87	ALA	2.0
1	A	956	ILE	2.0
1	A	75	LEU	2.0
1	A	509	GLY	2.0

## 6.2 Non-standard residues in protein, DNA, RNA chains ⓘ

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

## 6.3 Carbohydrates ⓘ

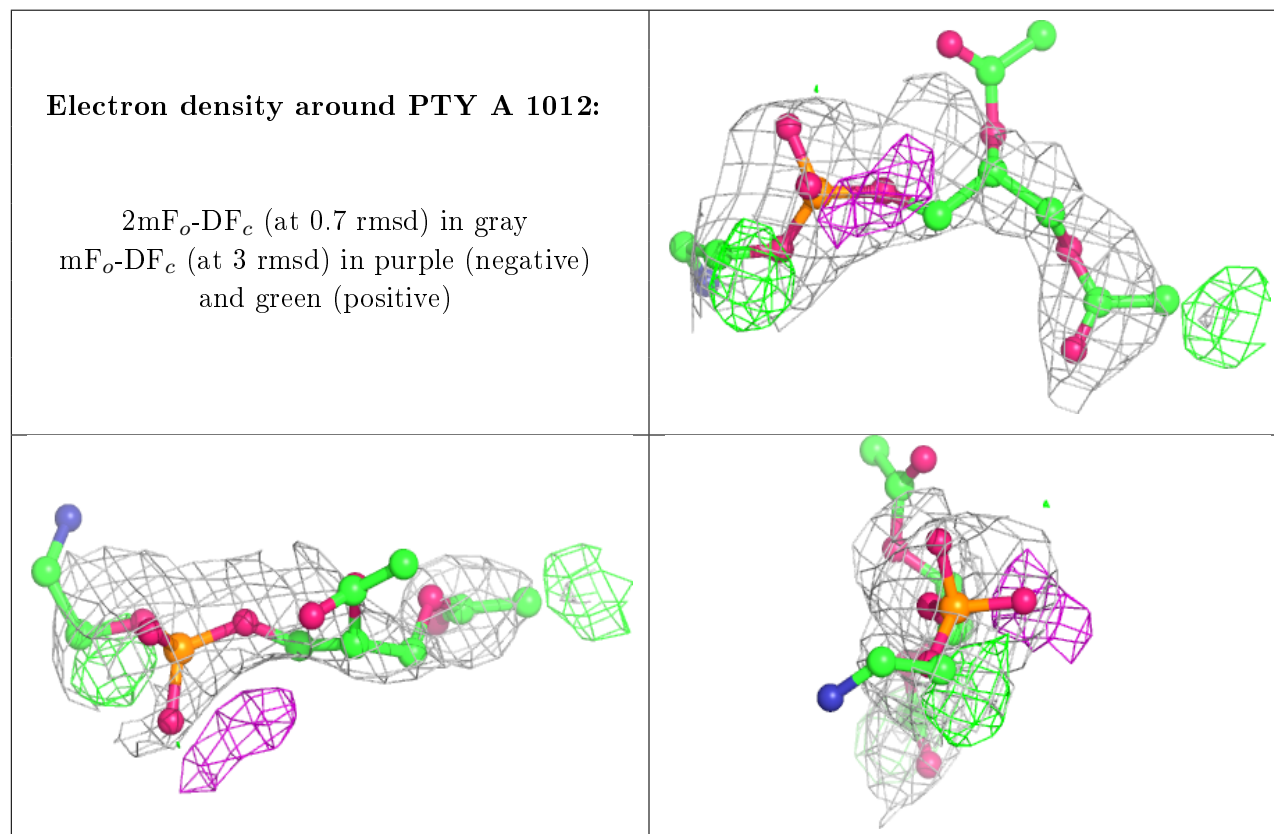
There are no carbohydrates in this entry.

## 6.4 Ligands ⓘ

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

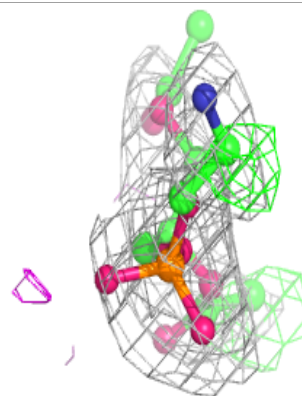
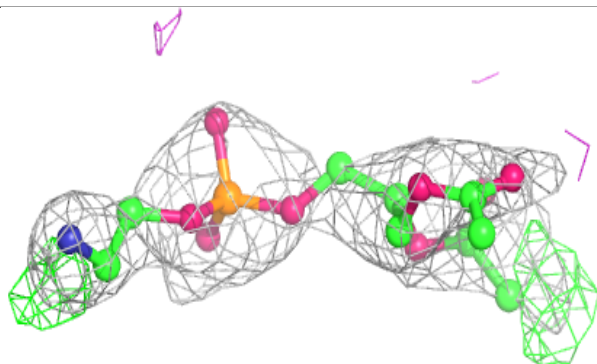
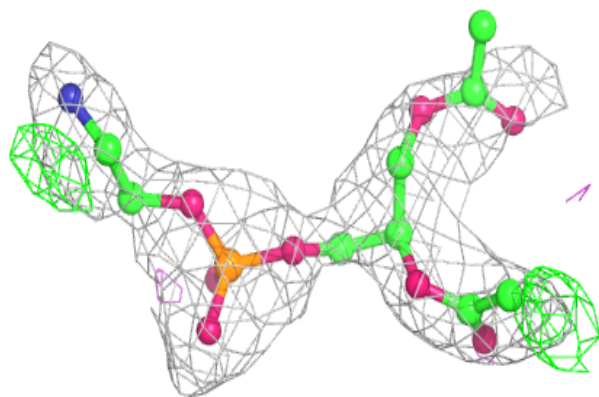
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
6	PTY	A	1012	19/50	0.77	0.30	109,113,116,116	0
6	PTY	A	1013	19/50	0.78	0.18	99,108,108,108	0
6	PTY	A	1011	19/50	0.83	0.19	114,115,117,117	0
3	MG	A	1001	1/1	0.85	0.11	65,65,65,65	0
5	TG1	A	1003	46/46	0.87	0.23	61,68,84,86	0
4	NA	A	1000	1/1	0.96	0.11	43,43,43,43	0
2	ATP	A	1002	31/31	0.98	0.12	42,52,62,64	0
3	MG	A	997	1/1	0.99	0.13	58,58,58,58	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.



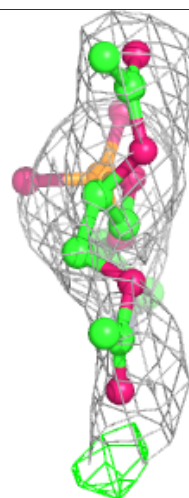
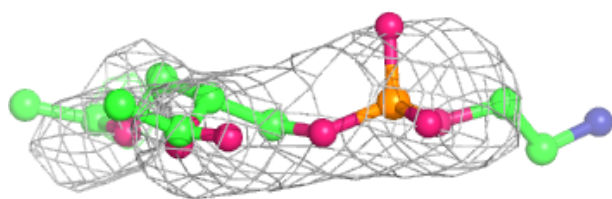
**Electron density around PTY A 1013:**

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



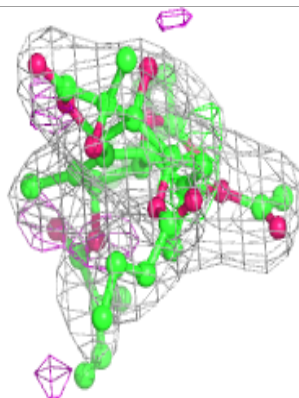
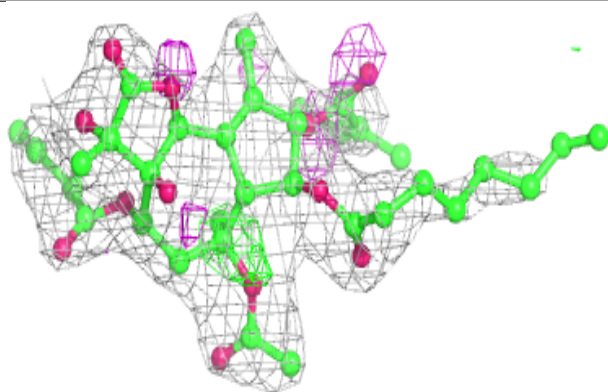
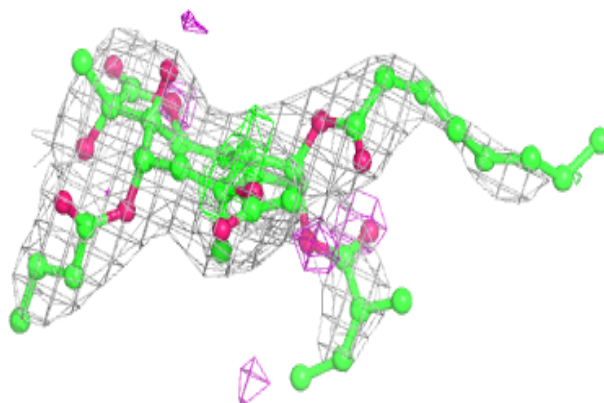
**Electron density around PTY A 1011:**

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

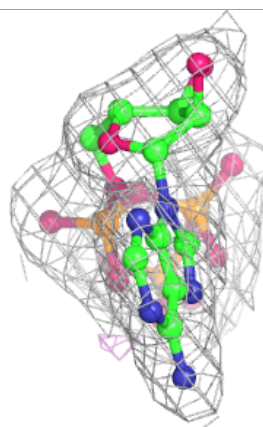
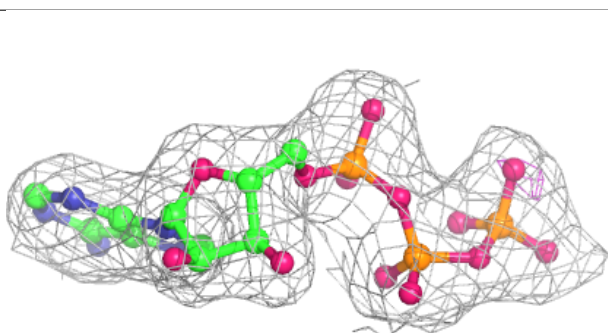
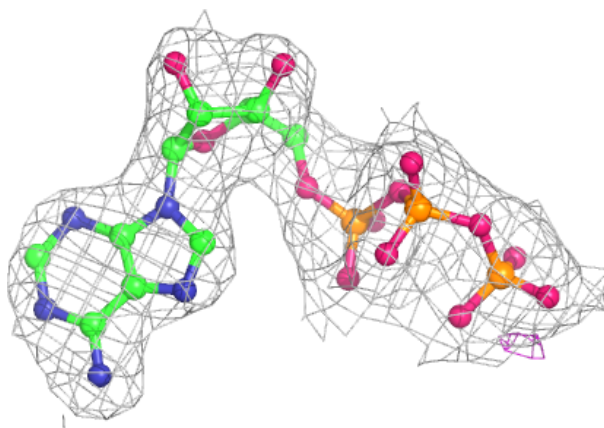


**Electron density around TG1 A 1003:**

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

**Electron density around ATP A 1002:**

$2mF_o-DF_c$  (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.