



# Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2026 – 12:06 PM EST

PDB ID : 9Y43 / pdb\_00009y43  
Title : 3-hydroxypropionyl-CoA Synthetase (ADP-forming) from *Nitrosopumilus maritimus*.  
Authors : Johnson, J.A.; Yilmaz, M.; Tosun, B.; Wakatsuki, S.; Demirci, H.  
Deposited on : 2025-09-02  
Resolution : 2.80 Å (reported)

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

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4-5-2 with Phenix2.0  
Mogul : 2022.3.0, CSD as543be (2022)  
Xtrriage (Phenix) : 2.0  
EDS : 3.0  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)  
CCP4 : 9.0.010 (Gargrove)  
Density-Fitness : 1.0.12  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.48.1

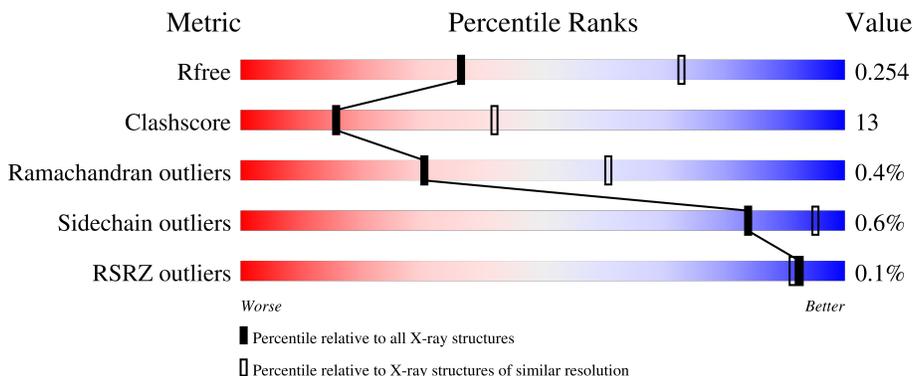
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.80 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))
$R_{free}$	164625	3657 (2.80-2.80)
Clashscore	180529	4123 (2.80-2.80)
Ramachandran outliers	177936	4071 (2.80-2.80)
Sidechain outliers	177891	4073 (2.80-2.80)
RSRZ outliers	164620	3659 (2.80-2.80)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	705	 68% 29% ..
1	B	705	 73% 27%

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
3	3OH	A	802	-	X	-	-
3	3OH	B	801	-	X	-	-

## 2 Entry composition [i](#)

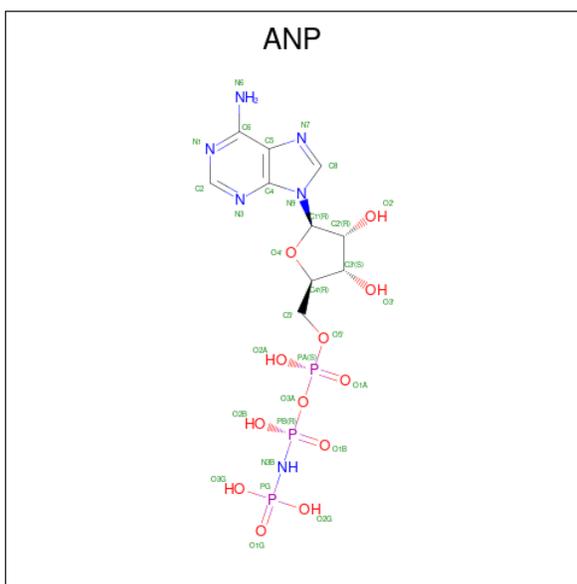
There are 6 unique types of molecules in this entry. The entry contains 10798 atoms, of which 13 are hydrogens and 0 are deuteriums.

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 3-hydroxypropionate--CoA ligase [ADP-forming].

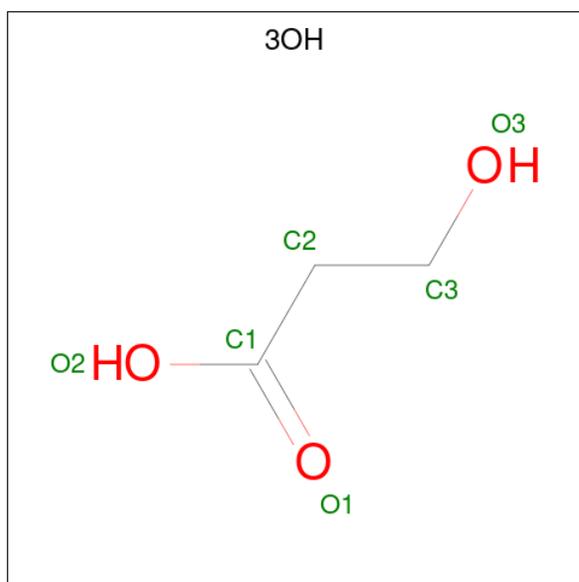
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	691	Total	C	N	O	S	0	1	0
			5255	3370	893	960	32			
1	B	703	Total	C	N	O	S	0	2	0
			5342	3422	905	983	32			

- Molecule 2 is PHOSPHOAMINOPHOSPHONIC ACID-ADENYLATE ESTER (CCD ID: ANP) (formula: C<sub>10</sub>H<sub>17</sub>N<sub>6</sub>O<sub>12</sub>P<sub>3</sub>) (labeled as "Ligand of Interest" by depositor).



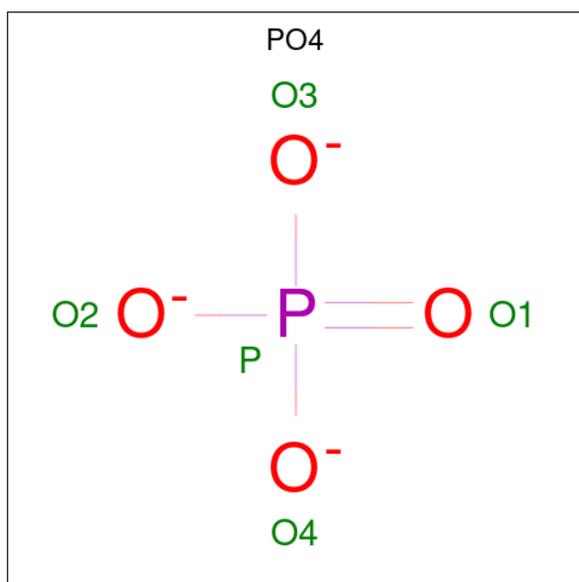
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	
			Total	C	H	N	O			P
2	A	1	Total	C	H	N	O	P	0	0
			44	10	13	6	12	3		

- Molecule 3 is 3-HYDROXY-PROPANOIC ACID (CCD ID: 3OH) (formula: C<sub>3</sub>H<sub>6</sub>O<sub>3</sub>) (labeled as "Ligand of Interest" by depositor).



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

- Molecule 4 is PHOSPHATE ION (CCD ID: PO4) (formula:  $O_4P$ ) (labeled as "Ligand of Interest" by depositor).



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

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

- Molecule 5 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	1	Total	Mg	0	0
			1	1		

- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	61	Total	O	0	0
			61	61		
6	B	73	Total	O	0	0
			73	73		



P218	H221	V223	K232	F253	V251	P267	N272	S273	I274	L275	I290	K296	I297	F298	I309	P310	G311	K312	V313	V316	V317	V318	S319	V320	P326	E330	V337	E358	A359	E360	V361	L364	I372	G379	R386	L387	D388	C389	A390	F391					
Q392	R396	M397	K401	F408	S409	Q410	M414	L419	K429	M430	I431	S432	F433	D438	V439	D440	E441	A442	D443	M444	Y447	A448	T454	K455	V456	F470	V473	V477	P484	L485	V486	I487	W488	K489	R492	T493	A494	K498	A501	T504	L507				
M511	A512	I513	I514	Y529	A538	Q410	A545	V550	A551	M552	T553	S554	M560	I564	L567	E568	K569	F570	G571	L572	L581	M585	G598	N599	P600	A601	G606	F614	Q618	F619	M620	D621	E622	K623	N624	I625	D626	I627	A628	M629	P630	W631	F634	Q635	D636
D637	P638	K653	K656	P657	L658	L659	C660	G661	T668	K673	L674	I675	E676	K677	V680	P681	V682	A692	L696	H697	S703	LYS	LYS																						

## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	81.88Å 127.59Å 137.76Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	48.72 – 2.80 48.72 – 2.80	Depositor EDS
% Data completeness (in resolution range)	73.2 (48.72-2.80) 73.3 (48.72-2.80)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.43 (at 2.81Å)	Xtrriage
Refinement program	PHENIX 1.21.2_5419	Depositor
R, $R_{free}$	0.211 , 0.254 0.211 , 0.254	Depositor DCC
$R_{free}$ test set	1296 reflections (3.57%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	55.8	Xtrriage
Anisotropy	0.102	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.33 , 49.6	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.47$ , $\langle L^2 \rangle = 0.30$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.91	EDS
Total number of atoms	10798	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	53.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.39% 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: 3OH, MG, PO4, ANP

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	0.21	0/5351	0.66	5/7201 (0.1%)
1	B	0.19	0/5441	0.64	7/7329 (0.1%)
All	All	0.20	0/10792	0.65	12/14530 (0.1%)

There are no bond length outliers.

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	75	GLY	CA-C-N	6.79	134.19	121.97
1	B	75	GLY	C-N-CA	6.79	134.19	121.97
1	B	296	LYS	CA-C-N	6.08	132.92	121.97
1	B	296	LYS	C-N-CA	6.08	132.92	121.97
1	A	105	VAL	CA-C-N	5.99	132.58	122.15
1	A	105	VAL	C-N-CA	5.99	132.58	122.15
1	A	138	MET	CA-CB-CG	-5.93	102.24	114.10
1	A	106	LYS	CA-C-N	5.48	132.15	121.41
1	A	106	LYS	C-N-CA	5.48	132.15	121.41
1	B	72	ASP	CA-C-N	5.47	131.82	121.97
1	B	72	ASP	C-N-CA	5.47	131.82	121.97
1	B	98	SER	CB-CA-C	-5.19	102.03	110.85

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	5255	0	5467	155	0
1	B	5342	0	5544	133	0
2	A	31	13	13	2	0
3	A	6	0	2	0	0
3	B	6	0	2	0	0
4	A	5	0	0	0	0
4	B	5	0	0	0	0
5	A	1	0	0	0	0
6	A	61	0	0	1	0
6	B	73	0	0	0	0
All	All	10785	13	11028	284	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 13.

All (284) 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:56:PHE:HB2	1:A:57:PRO:HD3	1.41	1.03
1:B:54:ILE:HG23	1:B:112:LYS:HD2	1.55	0.87
1:B:470:PHE:HZ	1:B:487:ILE:HD11	1.47	0.79
1:A:253:PHE:HZ	1:A:431:ILE:HD11	1.48	0.78
1:B:390:ALA:HB1	1:B:392:GLN:HE21	1.49	0.77
1:B:93:MET:HE3	1:B:108:ILE:HD13	1.67	0.76
1:A:76:VAL:HG11	1:A:93:MET:HG3	1.66	0.76
1:A:89:THR:HA	1:A:92:ASP:HB3	1.68	0.75
1:A:640:GLU:HB2	1:A:642:THR:HG22	1.70	0.74
1:B:316:VAL:HG23	1:B:337:VAL:HG11	1.69	0.73
1:A:56:PHE:HB2	1:A:57:PRO:CD	2.18	0.72
1:A:445:ILE:HD11	1:A:459:LEU:HD11	1.70	0.72
1:B:290:ILE:HD11	1:B:309:ILE:HD11	1.71	0.71
1:B:119:GLU:HG3	1:B:139:GLY:HA3	1.71	0.71
1:B:41:VAL:HG23	1:B:46:GLU:HG2	1.71	0.71
1:B:550:VAL:HG23	1:B:627:ILE:HB	1.75	0.69
1:B:191:MET:HE1	1:B:216:VAL:HG12	1.75	0.68
1:B:56:PHE:CD1	1:B:57:PRO:HD2	2.30	0.67
1:B:634:PHE:HD2	1:B:668:THR:HG23	1.61	0.65
1:B:20:THR:HG21	1:B:106:LYS:HE3	1.77	0.65
1:B:191:MET:HE2	1:B:221:HIS:CB	2.25	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:351:GLY:HA2	1:A:355:ALA:HB2	1.79	0.64
1:B:390:ALA:CB	1:B:392:GLN:HE21	2.10	0.64
1:B:392:GLN:HG3	1:B:397:MET:SD	2.36	0.64
1:B:470:PHE:CZ	1:B:487:ILE:HD11	2.31	0.64
1:A:470:PHE:HZ	1:A:487:ILE:HD11	1.61	0.64
1:B:309:ILE:HG22	1:B:311:GLY:H	1.63	0.64
1:A:240:SER:H	1:A:468[B]:ARG:HD2	1.63	0.64
1:B:550:VAL:HG21	1:B:629:MET:HE2	1.78	0.63
1:A:470:PHE:CZ	1:A:487:ILE:HD11	2.34	0.63
1:B:58:LEU:HD21	1:B:110:LEU:HD12	1.81	0.63
1:A:445:ILE:HG22	1:A:477:VAL:HG21	1.81	0.62
1:A:59:VAL:HG23	1:A:111:GLU:HB2	1.81	0.62
1:B:275:LEU:HD23	1:B:297:ILE:HG21	1.80	0.62
1:A:62:VAL:HG12	1:A:64:SER:H	1.63	0.62
1:B:136:VAL:HG12	1:B:164:MET:HE2	1.80	0.62
1:A:440:ASP:O	1:A:444:MET:HG3	2.00	0.61
1:B:659:LEU:HD21	1:B:696:LEU:HD12	1.81	0.61
1:B:191:MET:HE2	1:B:221:HIS:CG	2.35	0.61
1:A:456:VAL:HG13	1:A:484:PRO:HG2	1.83	0.60
1:A:350:LEU:HD11	1:A:354:ARG:HB2	1.84	0.59
1:A:57:PRO:HB2	1:A:113:MET:HB3	1.84	0.59
1:B:121:ILE:HD13	1:B:135:MET:HE3	1.85	0.59
1:A:554:SER:HB2	1:A:631:TRP:HB3	1.84	0.59
1:B:196:GLY:O	1:B:200:VAL:HG23	2.04	0.58
1:B:183:ILE:HA	1:B:218:PRO:HA	1.86	0.58
1:B:267:PRO:HA	1:B:272:ASN:ND2	2.19	0.58
1:A:112:LYS:O	1:A:112:LYS:HG2	2.04	0.57
1:A:137:GLY:HA3	1:A:149:VAL:HG12	1.86	0.57
1:B:55:GLY:O	1:B:112:LYS:HE2	2.05	0.57
1:B:191:MET:HE2	1:B:221:HIS:HB2	1.86	0.57
1:B:554:SER:HB3	1:B:631:TRP:HB3	1.87	0.56
1:B:620:MET:HA	1:B:656:LYS:HD2	1.86	0.56
1:A:95:GLY:O	1:A:99:LYS:HG3	2.06	0.56
1:A:606:GLY:HA2	1:A:638:PRO:HG2	1.88	0.56
1:A:405:VAL:HG22	1:A:456:VAL:HB	1.88	0.56
1:A:622:GLU:HG2	1:A:625:ILE:HD13	1.87	0.56
1:A:183:ILE:HA	1:A:218:PRO:HA	1.88	0.55
1:A:548:ASN:HB3	1:A:697:HIS:CE1	2.42	0.55
1:A:77:LYS:O	1:A:78:VAL:HG23	2.07	0.55
1:A:442:ALA:HB2	1:A:470:PHE:HA	1.89	0.55
1:A:270:ILE:O	1:A:274:ILE:HG13	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:614:PHE:O	1:B:618:GLN:HG2	2.08	0.54
1:A:341:VAL:HG21	1:A:380:MET:HE1	1.90	0.54
1:B:567:LEU:HD22	1:B:572:LEU:HB2	1.90	0.54
1:A:474:ALA:O	1:A:478:MET:HG3	2.08	0.53
1:A:122:VAL:HG11	1:A:195:ILE:HD12	1.90	0.53
1:A:214:VAL:HG22	1:A:223:VAL:HG13	1.90	0.53
1:B:64:SER:HB3	1:B:67:ILE:HG12	1.90	0.53
1:A:142:MET:O	1:A:146:MET:HG3	2.09	0.53
1:A:56:PHE:CB	1:A:57:PRO:HD3	2.27	0.53
1:B:297:ILE:HG22	1:B:298:PHE:H	1.74	0.53
1:B:552:MET:HE3	1:B:629:MET:HE3	1.91	0.53
1:B:477:VAL:HG21	1:B:485:ILE:HD11	1.91	0.53
1:A:378:ILE:HG21	1:A:416:ILE:HD11	1.91	0.53
1:B:97:LEU:HA	1:B:100:LYS:HG3	1.90	0.53
1:A:154:LEU:HD23	1:A:156:ILE:HG23	1.90	0.53
1:A:442:ALA:HB3	1:A:469:LYS:HE2	1.90	0.52
1:B:37:PRO:HG2	1:B:112:LYS:HD3	1.89	0.52
1:B:456:VAL:HG13	1:B:484:PRO:HG2	1.91	0.52
1:B:326:PRO:O	1:B:330:GLU:HG2	2.09	0.52
1:A:281:TYR:CZ	1:A:394:GLN:HG3	2.44	0.52
1:B:473:VAL:O	1:B:477:VAL:HG13	2.10	0.52
1:A:138:MET:HE3	1:A:170:GLY:C	2.35	0.51
1:B:214:VAL:HG22	1:B:223:VAL:HG13	1.92	0.51
1:B:675:ILE:HG22	1:B:680:VAL:HB	1.93	0.51
1:A:191:MET:O	1:A:195:ILE:HG13	2.11	0.51
1:B:206:ILE:HD13	1:B:209:ILE:HD11	1.93	0.51
1:B:275:LEU:CD2	1:B:297:ILE:HG21	2.40	0.51
1:B:564:ILE:HD11	1:B:600:PRO:HG2	1.92	0.51
1:A:448:ALA:HB1	1:A:454:THR:HG21	1.93	0.51
1:A:627:ILE:HG23	1:A:657:PRO:HB2	1.93	0.51
1:A:544:ALA:HB2	1:A:699:TRP:CD1	2.46	0.51
1:A:390:ALA:HB1	1:A:392:GLN:OE1	2.11	0.51
1:A:37:PRO:HG2	1:A:112:LYS:HD2	1.92	0.50
1:A:625:ILE:O	1:A:656:LYS:HE3	2.11	0.50
1:B:37:PRO:HB2	1:B:54:ILE:HG12	1.94	0.50
1:B:598:GLY:O	1:B:601:ALA:HB2	2.11	0.50
1:A:161:ALA:HA	1:A:164:MET:HE2	1.93	0.50
1:A:51:ALA:N	1:A:87:LYS:HZ3	2.09	0.50
1:A:213:PRO:HD3	2:A:801:ANP:H5'2	1.93	0.50
1:B:41:VAL:HG12	1:B:108:ILE:O	2.12	0.50
1:A:622:GLU:HG3	1:A:624:ASN:H	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:672:ILE:HG23	1:A:682:VAL:HB	1.93	0.50
1:A:16:HIS:H	1:A:16:HIS:CD2	2.29	0.50
1:A:51:ALA:HB3	1:A:90:PHE:HE2	1.76	0.50
1:A:634:PHE:HD2	1:A:668:THR:HG23	1.77	0.50
1:A:290:ILE:HD11	1:A:309:ILE:HD11	1.94	0.49
1:B:408:PHE:HB3	1:B:444:MET:HE3	1.94	0.49
1:A:59:VAL:HG12	1:A:77:LYS:HA	1.94	0.49
1:B:386:ARG:NH2	1:B:401:LYS:HA	2.27	0.49
1:B:154:LEU:HB3	1:B:200:VAL:HG22	1.95	0.49
1:A:620:MET:HA	1:A:656:LYS:HD2	1.95	0.49
1:B:410:GLN:HG2	1:B:504:THR:HG21	1.95	0.49
1:B:581:LEU:HD12	1:B:622:GLU:HB2	1.93	0.49
1:A:88:LYS:HD3	1:A:89:THR:OG1	2.13	0.49
1:A:501:ALA:HB2	1:A:507:LEU:HD23	1.95	0.49
1:A:106:LYS:HG2	1:A:107:GLY:H	1.78	0.48
1:A:209:ILE:HG23	1:A:228:ILE:HG22	1.95	0.48
1:A:38:TYR:HA	1:A:110:LEU:O	2.13	0.48
1:B:28[B]:LEU:HG	1:B:33:VAL:CG2	2.43	0.48
1:A:94:TYR:HD1	1:A:108:ILE:HG13	1.78	0.48
1:A:263:ALA:HB1	1:A:275:LEU:HD22	1.95	0.48
1:B:379:GLY:HA3	1:B:389:CYS:SG	2.54	0.48
1:A:318:VAL:HG13	1:A:320:VAL:HG12	1.95	0.48
1:A:139:GLY:HA2	1:A:143:THR:HG23	1.95	0.48
1:A:113:MET:HA	2:A:801:ANP:N1	2.29	0.48
1:A:574:ILE:O	1:A:574:ILE:HD12	2.13	0.48
1:A:89:THR:HG22	1:A:93:MET:HG2	1.96	0.47
1:A:253:PHE:CZ	1:A:431:ILE:HD11	2.37	0.47
1:A:392:GLN:HG3	1:B:636:ASP:HA	1.96	0.47
1:A:392:GLN:HB2	1:A:397:MET:HE3	1.95	0.47
1:B:433:PHE:CD1	1:B:444:MET:HE1	2.48	0.47
1:B:626:ASP:O	1:B:657:PRO:HD2	2.14	0.47
1:A:626:ASP:O	1:A:657:PRO:HD2	2.14	0.47
1:B:441:GLU:HA	1:B:444:MET:HE2	1.97	0.47
1:A:281:TYR:CE1	1:A:394:GLN:HG3	2.50	0.47
1:B:414:MET:HE3	1:B:488:TRP:CZ3	2.49	0.47
1:A:537:LYS:HE3	1:A:681:PRO:HB3	1.96	0.47
1:B:390:ALA:HB1	1:B:392:GLN:HG2	1.96	0.47
1:A:657:PRO:HB3	1:A:696:LEU:HD13	1.95	0.47
1:B:62:VAL:HG12	1:B:70:LYS:HG3	1.96	0.47
1:B:261:VAL:HA	1:B:290:ILE:HB	1.96	0.47
1:A:396:ARG:HB3	1:B:635:GLN:HA	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:662:GLY:O	1:A:684:GLN:HG2	2.15	0.47
1:A:335:LYS:HG3	1:A:337:VAL:HG23	1.98	0.46
1:B:17:LYS:HE2	1:B:232:LYS:HA	1.98	0.46
1:B:121:ILE:CD1	1:B:135:MET:HE3	2.46	0.46
1:B:442:ALA:HB2	1:B:470:PHE:HA	1.97	0.46
1:A:60:MET:HG2	1:A:110:LEU:HD23	1.97	0.46
1:A:478:MET:HE3	1:A:484:PRO:HA	1.97	0.46
1:A:240:SER:H	1:A:468[A]:ARG:HD2	1.81	0.46
1:A:551:ALA:HB2	1:A:625:ILE:HG12	1.97	0.46
1:A:53:LYS:HG3	1:A:58:LEU:HD13	1.96	0.46
1:B:606:GLY:HA2	1:B:638:PRO:HG2	1.98	0.46
1:B:60:MET:HA	1:B:109:LEU:O	2.16	0.46
1:B:551:ALA:HB2	1:B:625:ILE:HG12	1.97	0.46
1:A:588:ARG:HD2	1:A:614:PHE:CD2	2.50	0.46
1:A:667:TYR:CG	1:B:396:ARG:HA	2.51	0.46
1:B:56:PHE:O	1:B:57:PRO:C	2.59	0.46
1:B:57:PRO:HB2	1:B:113:MET:HE2	1.98	0.46
1:B:419:LEU:HD21	1:B:430:MET:SD	2.56	0.46
1:A:93:MET:HE3	1:A:93:MET:HA	1.96	0.46
1:B:569:LYS:HE2	1:B:570:PHE:CZ	2.51	0.46
1:A:418:MET:HE2	1:A:418:MET:HB2	1.79	0.45
1:A:27:ILE:HG22	1:A:198:LEU:HD21	1.96	0.45
1:B:37:PRO:HG2	1:B:112:LYS:CD	2.47	0.45
1:B:184:ASP:OD1	1:B:186:ASN:HB2	2.16	0.45
1:B:214:VAL:HG13	1:B:223:VAL:HG22	1.98	0.45
1:A:58:LEU:HD11	1:A:110:LEU:HD22	1.98	0.45
1:A:335:LYS:HE2	1:A:335:LYS:HA	1.97	0.45
1:B:360:GLU:O	1:B:364:LEU:HD12	2.17	0.45
1:B:433:PHE:CE1	1:B:444:MET:HE1	2.52	0.45
1:B:622:GLU:HG2	1:B:625:ILE:HD13	1.97	0.45
1:A:670:LYS:HA	1:A:670:LYS:HE2	1.98	0.45
1:A:144:GLU:O	1:A:147:LYS:HG3	2.17	0.45
1:B:20:THR:OG1	1:B:63:VAL:HG13	2.17	0.45
1:A:329:LEU:CD2	1:A:372:ILE:HD11	2.47	0.45
1:B:358:GLU:O	1:B:361:VAL:HG22	2.17	0.44
1:A:18:VAL:HG22	1:A:229:ILE:HG13	1.99	0.44
1:A:58:LEU:HD21	1:A:110:LEU:HD23	2.00	0.44
1:B:14:THR:O	1:B:17:LYS:HG3	2.17	0.44
1:A:515:MET:HE3	1:A:515:MET:HB3	1.75	0.44
1:B:53:LYS:O	1:B:54:ILE:HB	2.16	0.44
1:B:123:GLY:HA3	1:B:135:MET:HE2	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:151:PHE:CD1	1:B:513:ILE:HG12	2.52	0.44
1:A:191:MET:HE2	1:A:195:ILE:HD11	1.99	0.44
1:A:549:LYS:HA	1:A:573:ALA:O	2.17	0.44
1:B:492:ARG:HG2	1:B:511:ASN:OD1	2.18	0.44
1:A:482:LYS:HD3	1:A:482:LYS:HA	1.74	0.44
1:A:499:GLN:HG3	1:B:564:ILE:HD13	2.00	0.44
1:A:598:GLY:O	1:A:601:ALA:HB2	2.17	0.44
1:B:64:SER:HB3	1:B:67:ILE:CG1	2.47	0.44
1:B:673:LYS:O	1:B:677:LYS:HG2	2.18	0.44
1:A:257:SER:OG	1:A:313:VAL:HA	2.17	0.43
1:A:326:PRO:HB2	1:A:327:PRO:HD3	2.00	0.43
1:A:407:PHE:CE2	1:A:409:SER:HB2	2.53	0.43
1:B:122:VAL:HG11	1:B:195:ILE:HG21	2.00	0.43
1:B:660:CYS:HB2	1:B:682:VAL:HG22	2.00	0.43
1:B:79:GLY:O	1:B:80:LEU:HD23	2.17	0.43
1:B:623:LYS:HB2	1:B:623:LYS:HE2	1.87	0.43
1:B:545:ALA:HB3	1:B:697:HIS:HA	1.99	0.43
1:A:673:LYS:O	1:A:677:LYS:HD3	2.18	0.43
1:B:448:ALA:HB1	1:B:454:THR:HG21	1.99	0.43
1:A:130:PHE:HA	1:A:468[B]:ARG:HG3	2.00	0.43
1:A:528:SER:HB3	1:A:531:GLU:HG3	2.00	0.43
1:A:634:PHE:CD2	1:A:668:THR:HG23	2.54	0.43
1:A:28:LEU:HD21	1:A:211:PHE:CZ	2.54	0.43
1:A:134:ILE:HG21	1:A:156:ILE:HD13	2.01	0.43
1:A:316:VAL:O	1:A:340:VAL:HA	2.18	0.43
1:A:585:MET:HA	1:A:614:PHE:HZ	1.84	0.43
1:B:477:VAL:CG2	1:B:485:ILE:HD11	2.48	0.43
1:B:551:ALA:HA	1:B:599:ASN:HD21	1.82	0.43
1:A:124:ILE:HB	1:A:209:ILE:HB	2.01	0.43
1:A:333:ALA:HB2	1:A:368:HIS:CG	2.54	0.43
1:B:90:PHE:CD1	1:B:90:PHE:C	2.97	0.43
1:B:253:PHE:CZ	1:B:431:ILE:HD11	2.54	0.43
1:B:318:VAL:HG13	1:B:320:VAL:HG22	2.00	0.43
1:B:189:ALA:O	1:B:193:VAL:HG23	2.19	0.43
1:B:489:LYS:HE3	1:B:514:ILE:HD13	2.00	0.43
1:B:538:ALA:HB2	1:B:692:ALA:HB1	2.00	0.43
1:A:213:PRO:O	1:A:224:VAL:HG22	2.18	0.42
1:B:181:GLU:H	1:B:181:GLU:HG2	1.62	0.42
1:B:440:ASP:O	1:B:444:MET:HG3	2.19	0.42
1:A:445:ILE:HD12	1:A:470:PHE:HE1	1.83	0.42
1:B:253:PHE:HZ	1:B:431:ILE:HD11	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:160:ASP:O	1:A:164:MET:HG3	2.18	0.42
1:B:253:PHE:CD1	1:B:429:LYS:HG2	2.54	0.42
1:B:554:SER:CB	1:B:631:TRP:HB3	2.49	0.42
1:A:109:LEU:HD23	1:A:109:LEU:HA	1.84	0.42
1:B:585:MET:HA	1:B:614:PHE:HE2	1.84	0.42
1:A:260:LEU:HG	1:A:263:ALA:HB2	2.02	0.42
1:A:546:LYS:HZ1	1:A:623:LYS:HD3	1.85	0.42
1:A:152:ARG:HG2	1:A:164:MET:SD	2.59	0.42
1:A:622:GLU:C	1:A:624:ASN:H	2.27	0.42
1:A:104:ASN:CG	1:A:105:VAL:H	2.28	0.42
1:A:341:VAL:HG22	1:A:373:ILE:HB	2.00	0.42
1:A:660:CYS:HB2	1:A:682:VAL:HG22	2.02	0.42
1:B:494:ALA:O	1:B:498:LYS:HG3	2.19	0.42
1:B:653:LYS:HB3	1:B:653:LYS:HE3	1.77	0.42
1:B:372:ILE:H	1:B:438:ASP:HB3	1.84	0.42
1:A:258:VAL:HA	1:A:315:LEU:O	2.20	0.42
1:B:631:TRP:CE3	1:B:661:GLY:HA3	2.55	0.42
1:A:170:GLY:C	1:A:172:LYS:N	2.78	0.41
1:A:445:ILE:CG2	1:A:477:VAL:HG21	2.49	0.41
1:B:560:MET:HE3	1:B:600:PRO:HB2	2.02	0.41
1:A:411:SER:HB3	1:A:460:TYR:CE1	2.54	0.41
1:A:551:ALA:HB2	1:A:625:ILE:CG1	2.50	0.41
1:B:3:ALA:O	1:B:7:ILE:HD12	2.20	0.41
1:B:38:TYR:HA	1:B:110:LEU:O	2.20	0.41
1:B:274:ILE:HG23	1:B:389:CYS:C	2.45	0.41
1:A:445:ILE:HD12	1:A:470:PHE:CE1	2.56	0.41
1:A:11:ILE:HG21	1:A:19:ILE:HG12	2.01	0.41
1:A:70:LYS:H	1:A:70:LYS:HG2	1.59	0.41
1:B:429:LYS:HD3	1:B:447:TYR:HE1	1.85	0.41
1:A:4:VAL:HG11	1:A:31:TYR:HE1	1.86	0.41
1:A:290:ILE:HG12	1:A:306:VAL:HG12	2.03	0.41
1:B:147:LYS:CG	1:B:147:LYS:O	2.69	0.41
1:A:60:MET:HE1	1:A:93:MET:HB2	2.02	0.41
1:A:96:ARG:HA	1:A:99:LYS:HD2	2.02	0.41
1:A:348:LYS:HB3	1:A:358:GLU:HG2	2.01	0.41
1:B:501:ALA:HB2	1:B:507:LEU:HA	2.02	0.41
1:A:73:VAL:HB	1:A:74:GLY:H	1.79	0.41
1:A:154:LEU:HD23	1:A:154:LEU:HA	1.93	0.41
1:B:41:VAL:HG21	1:B:47:ALA:CA	2.51	0.41
1:B:77:LYS:HG3	1:B:80:LEU:HD21	2.03	0.41
1:A:53:LYS:C	1:A:54:ILE:HG13	2.44	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:121:ILE:HG13	1:A:212:ASN:HB2	2.02	0.41
1:A:269:LYS:NZ	6:A:904:HOH:O	2.53	0.41
1:A:338:HIS:HA	1:A:370:ILE:HG23	2.02	0.41
1:A:672:ILE:HG12	1:A:682:VAL:HG11	2.03	0.41
1:B:488:TRP:CZ3	1:B:529:TYR:HB2	2.56	0.41
1:A:492:ARG:HG2	1:A:511:ASN:OD1	2.21	0.40
1:B:560:MET:O	1:B:564:ILE:HG13	2.21	0.40
1:A:191:MET:HG3	1:A:192:LEU:N	2.36	0.40
1:A:341:VAL:HG21	1:A:380:MET:CE	2.51	0.40
1:B:58:LEU:HD21	1:B:110:LEU:CD1	2.50	0.40
1:B:28[B]:LEU:HD23	1:B:35:VAL:HG12	2.02	0.40
1:B:387:LEU:HD12	1:B:388:ASP:N	2.36	0.40
1:A:58:LEU:HD11	1:A:110:LEU:CD2	2.51	0.40
1:A:85:ASP:HB2	1:A:88:LYS:HB3	2.03	0.40
1:A:279:VAL:HG12	1:A:287:VAL:HB	2.03	0.40
1:A:488:TRP:CZ3	1:A:529:TYR:HB2	2.57	0.40
1:B:232:LYS:HA	1:B:232:LYS:HD2	1.87	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	A	684/705 (97%)	673 (98%)	9 (1%)	2 (0%)	37 67
1	B	703/705 (100%)	685 (97%)	15 (2%)	3 (0%)	30 61
All	All	1387/1410 (98%)	1358 (98%)	24 (2%)	5 (0%)	30 61

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	73	VAL

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Mol	Chain	Res	Type
1	B	178	ARG
1	A	71	THR
1	B	54	ILE
1	B	313	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	A	569/577 (99%)	566 (100%)	3 (0%)	86	95
1	B	577/577 (100%)	573 (99%)	4 (1%)	81	94
All	All	1146/1154 (99%)	1139 (99%)	7 (1%)	84	95

All (7) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	301	LYS
1	A	445	ILE
1	A	555	ASN
1	B	19	ILE
1	B	76	VAL
1	B	172	LYS
1	B	386	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (9) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	30	ASN
1	A	166	ASN
1	A	338	HIS
1	A	697	HIS
1	B	186	ASN
1	B	202	ASN
1	B	272	ASN

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Mol	Chain	Res	Type
1	B	392	GLN
1	B	624	ASN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

### 5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

### 5.6 Ligand geometry [i](#)

Of 6 ligands modelled in this entry, 1 is 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
4	PO4	B	802	-	4,4,4	1.50	1 (25%)	6,6,6	0.39	0
3	3OH	B	801	-	5,5,5	23.71	4 (80%)	5,5,5	28.54	4 (80%)
2	ANP	A	801	-	29,33,33	1.25	5 (17%)	31,52,52	1.21	5 (16%)
3	3OH	A	802	-	5,5,5	23.93	4 (80%)	5,5,5	28.61	4 (80%)
4	PO4	A	803	-	4,4,4	1.44	1 (25%)	6,6,6	0.54	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	ANP	A	801	-	-	8/14/38/38	0/3/3/3
3	3OH	B	801	-	-	3/3/3/3	-
3	3OH	A	802	-	-	3/3/3/3	-

All (15) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	802	3OH	O1-C1	36.16	2.40	1.22
3	B	801	3OH	O1-C1	35.57	2.38	1.22
3	A	802	3OH	O2-C1	33.64	2.42	1.30
3	B	801	3OH	O2-C1	33.61	2.41	1.30
3	A	802	3OH	C2-C3	20.34	2.50	1.51
3	B	801	3OH	C2-C3	20.14	2.49	1.51
3	B	801	3OH	O3-C3	-3.10	1.26	1.42
3	A	802	3OH	O3-C3	-3.09	1.26	1.42
2	A	801	ANP	PB-O1B	2.96	1.50	1.46
2	A	801	ANP	PG-O1G	2.81	1.50	1.46
4	B	802	PO4	P-O1	2.70	1.56	1.50
4	A	803	PO4	P-O1	2.48	1.56	1.50
2	A	801	ANP	PG-O2G	-2.33	1.50	1.56
2	A	801	ANP	PB-O2B	-2.33	1.50	1.56
2	A	801	ANP	PG-O3G	-2.22	1.50	1.56

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	802	3OH	C3-C2-C1	-56.94	34.96	113.11
3	B	801	3OH	C3-C2-C1	-56.80	35.14	113.11
3	A	802	3OH	O1-C1-C2	-28.28	33.38	123.09
3	B	801	3OH	O1-C1-C2	-28.14	33.84	123.09
3	B	801	3OH	O3-C3-C2	-5.19	91.53	110.96
3	A	802	3OH	O3-C3-C2	-5.13	91.72	110.96
3	A	802	3OH	O2-C1-C2	4.90	129.47	114.00
3	B	801	3OH	O2-C1-C2	4.73	128.96	114.00
2	A	801	ANP	O2B-PB-O1B	3.80	118.02	109.87
2	A	801	ANP	O2G-PG-O1G	-2.53	107.10	113.45
2	A	801	ANP	O3A-PB-N3B	-2.45	99.79	106.59
2	A	801	ANP	C5-C6-N6	2.45	124.04	120.31
2	A	801	ANP	O3G-PG-O1G	-2.29	107.70	113.45

There are no chirality outliers.

All (14) torsion outliers are listed below:

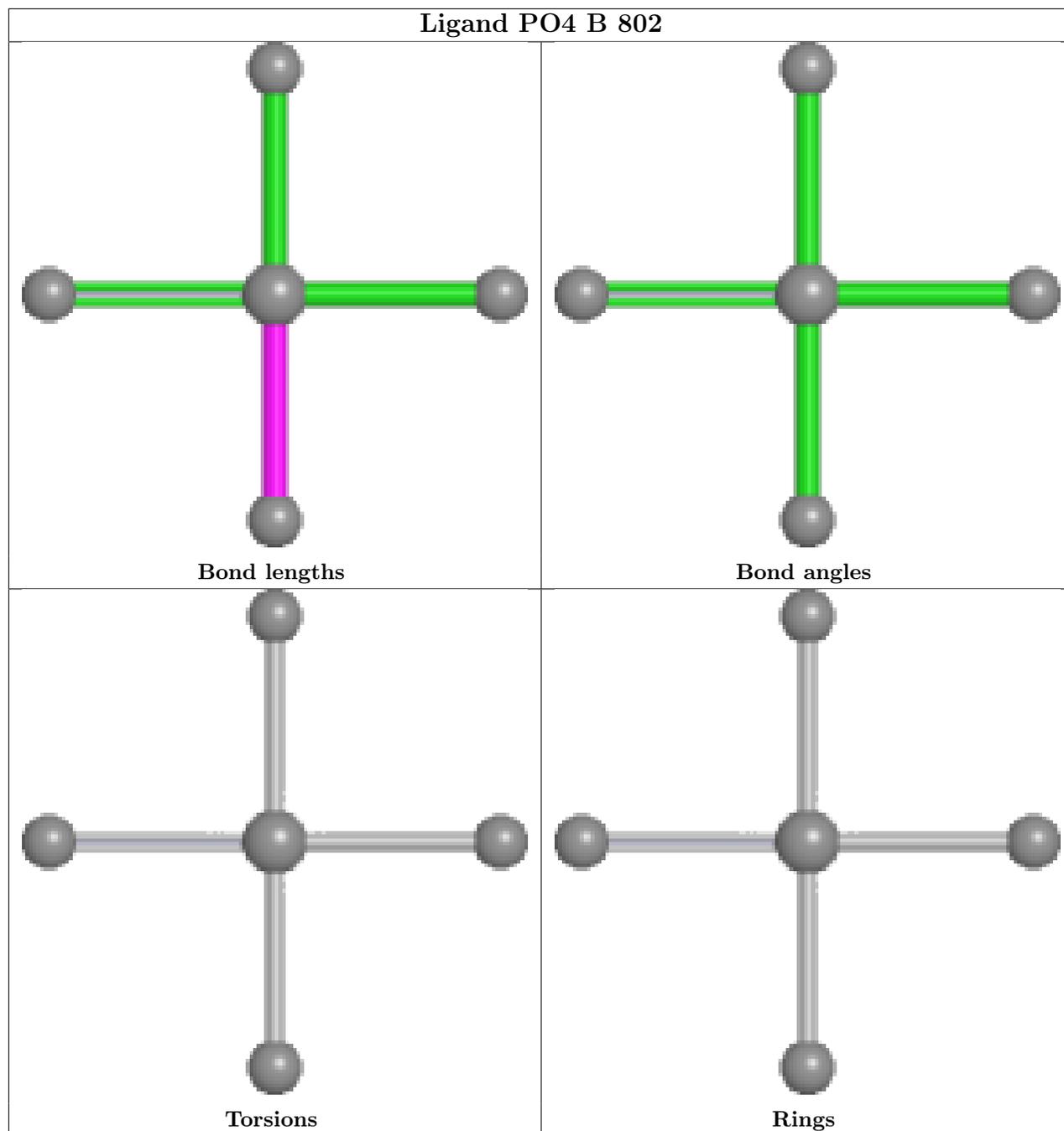
Mol	Chain	Res	Type	Atoms
2	A	801	ANP	PB-N3B-PG-O1G
2	A	801	ANP	O4'-C4'-C5'-O5'
2	A	801	ANP	C3'-C4'-C5'-O5'
3	A	802	3OH	C1-C2-C3-O3
3	B	801	3OH	C1-C2-C3-O3
2	A	801	ANP	PB-O3A-PA-O1A
3	A	802	3OH	O1-C1-C2-C3
2	A	801	ANP	C4'-C5'-O5'-PA
3	B	801	3OH	O1-C1-C2-C3
3	A	802	3OH	O2-C1-C2-C3
3	B	801	3OH	O2-C1-C2-C3
2	A	801	ANP	PB-O3A-PA-O2A
2	A	801	ANP	PG-N3B-PB-O1B
2	A	801	ANP	PA-O3A-PB-O2B

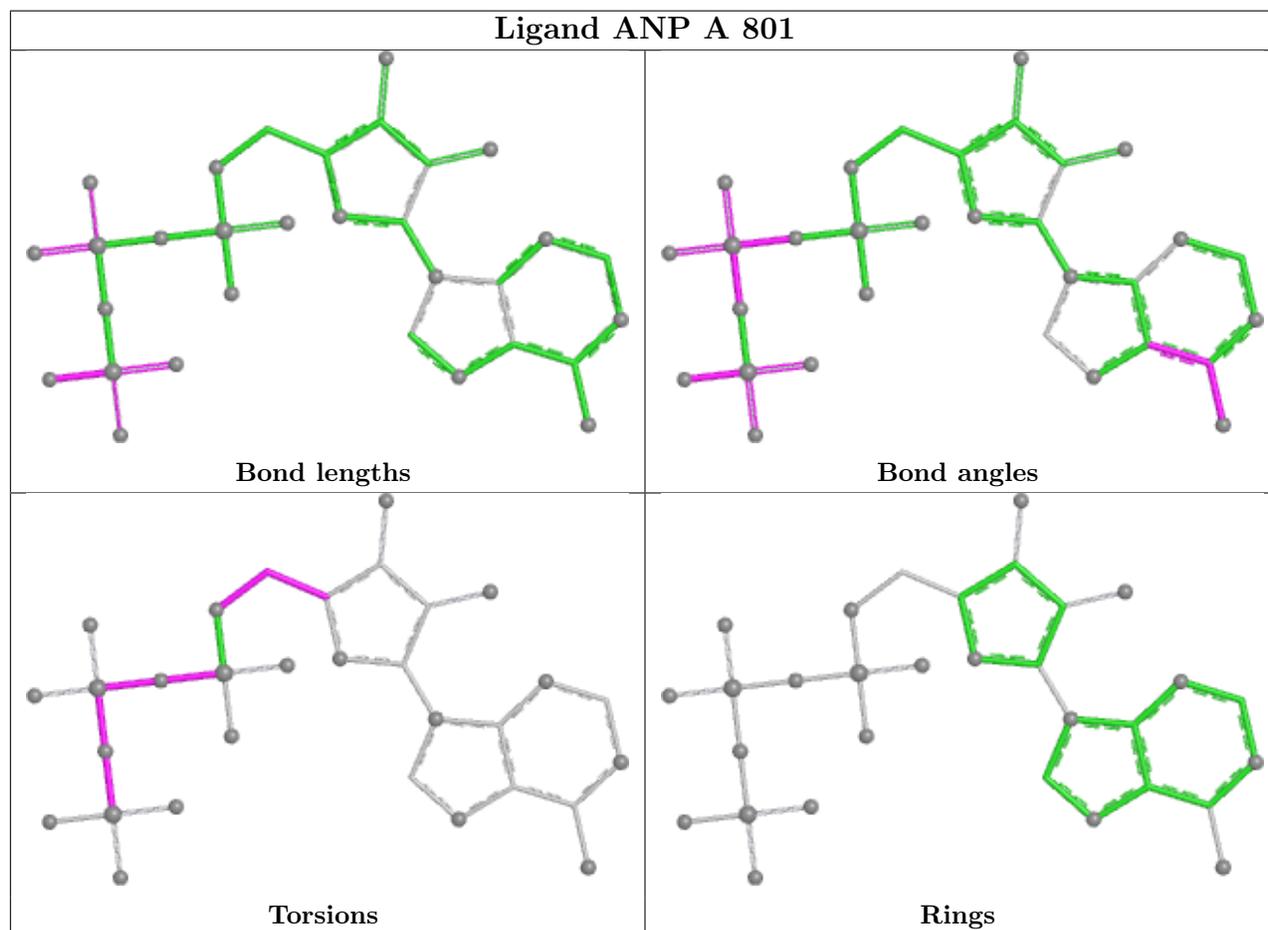
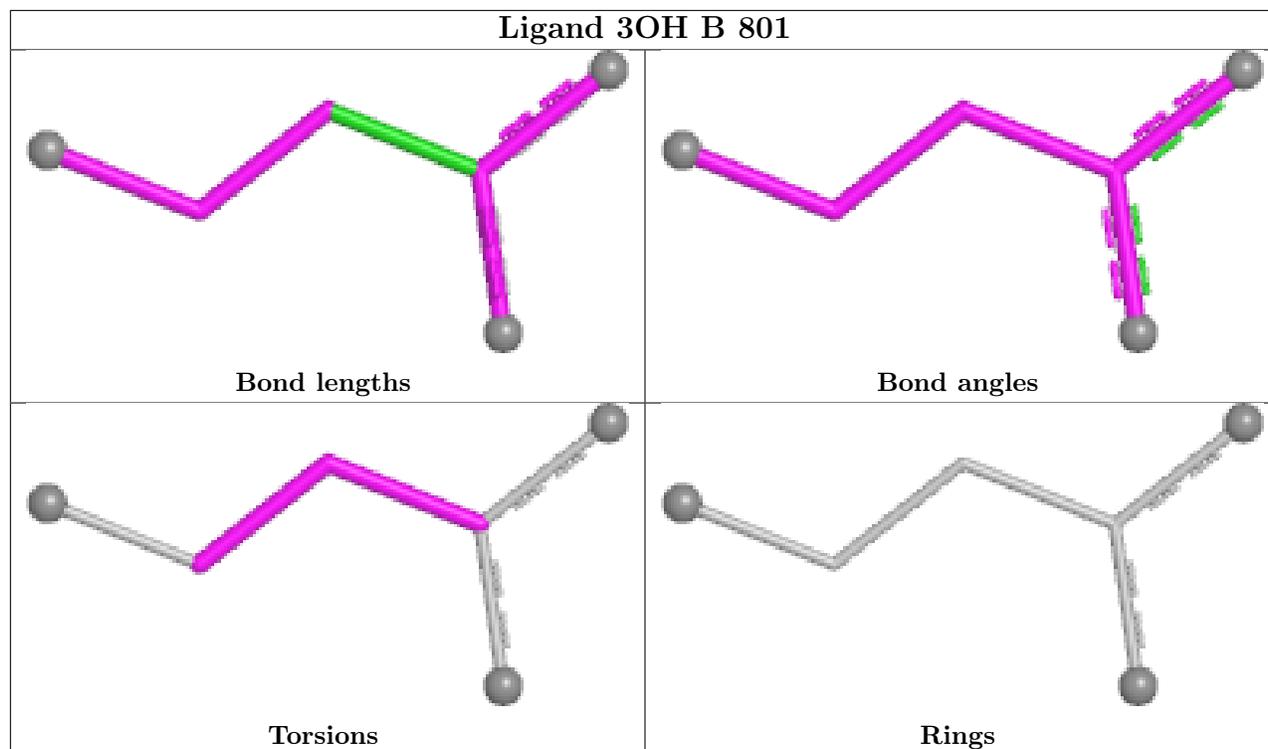
There are no ring outliers.

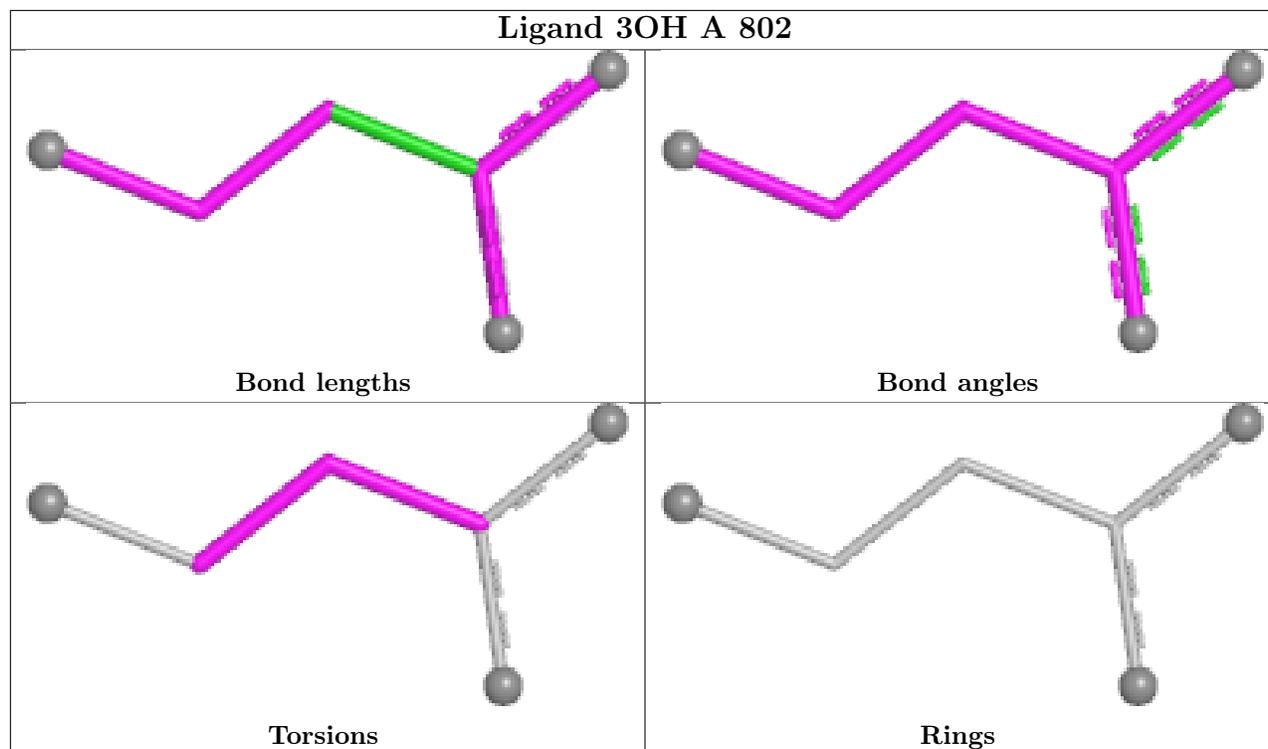
1 monomer is involved in 2 short contacts:

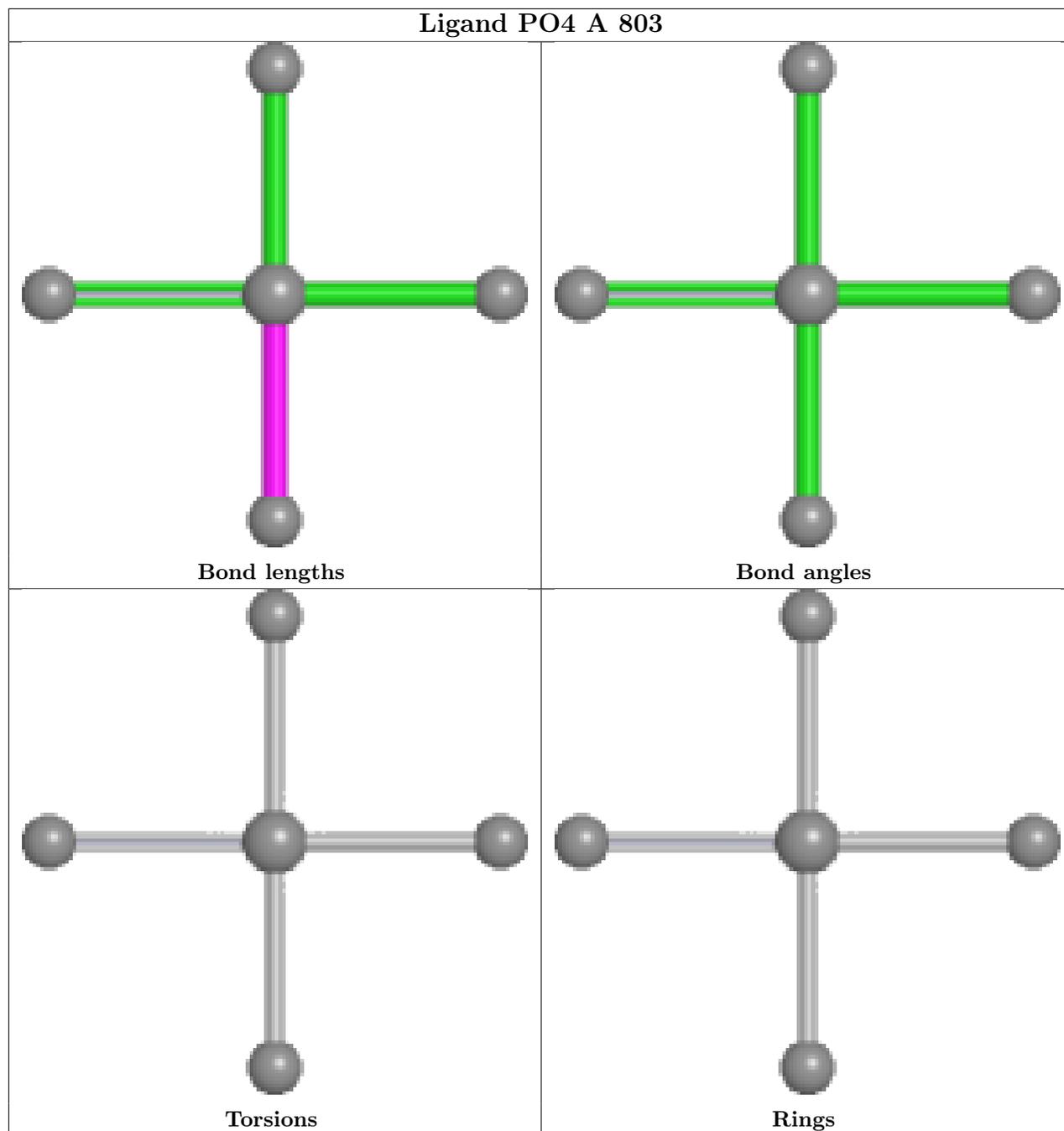
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	801	ANP	2	0

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, 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	691/705 (98%)	-0.09	1 (0%) 92   91	21, 52, 88, 123	1 (0%)
1	B	703/705 (99%)	-0.24	1 (0%) 92   91	18, 48, 74, 95	2 (0%)
All	All	1394/1410 (98%)	-0.17	2 (0%) 92   91	18, 50, 81, 123	3 (0%)

All (2) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	86	VAL	2.4
1	B	60	MET	2.4

### 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 oligosaccharides in this entry.

### 6.4 Ligands [i](#)

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

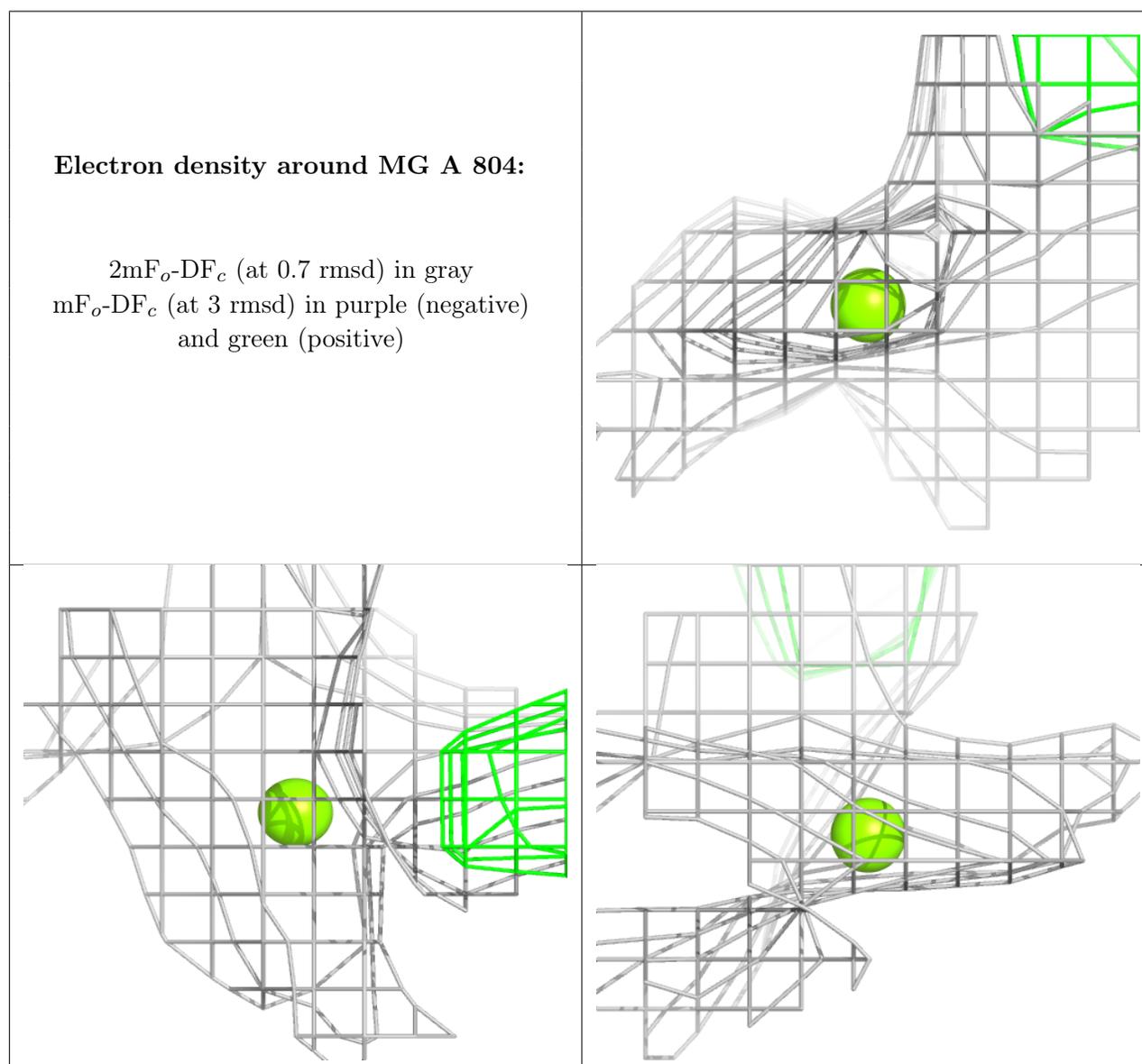
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å <sup>2</sup> )	Q<0.9
5	MG	A	804	1/1	0.65	0.17	108,108,108,108	0
2	ANP	A	801	31/31	0.67	0.12	64,86,128,181	0
3	3OH	A	802	6/6	0.86	0.10	55,57,58,60	0

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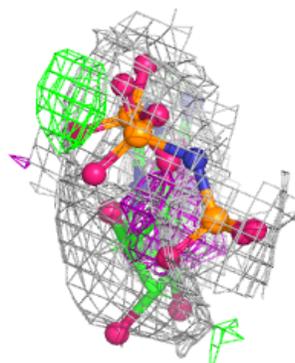
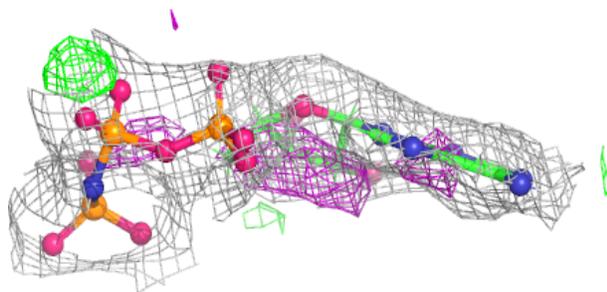
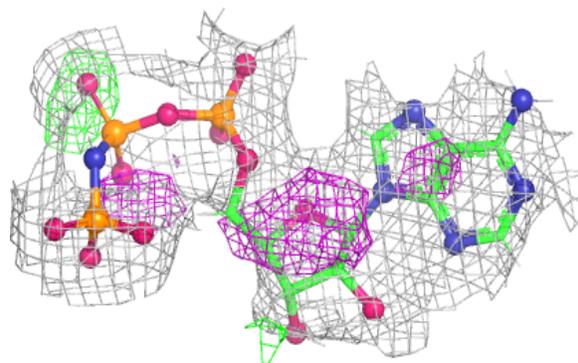
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors( $\text{\AA}^2$ )	Q<0.9
3	3OH	B	801	6/6	0.89	0.12	38,42,49,49	0
4	PO4	B	802	5/5	0.95	0.09	38,46,47,61	0
4	PO4	A	803	5/5	0.98	0.06	27,33,43,50	0

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.

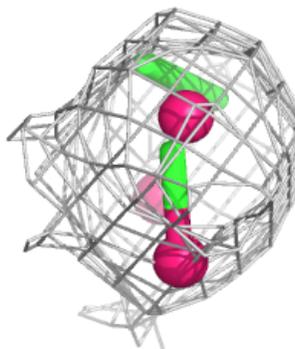
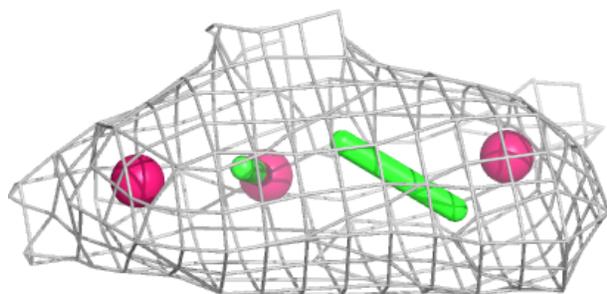
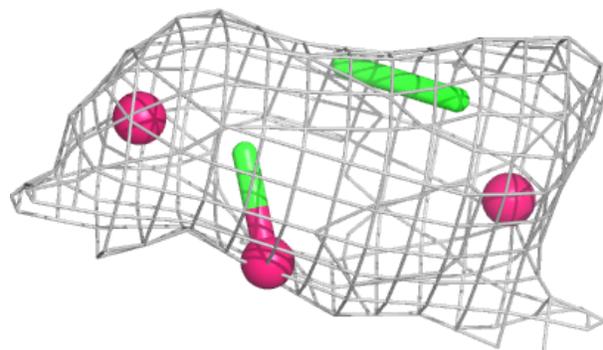


**Electron density around ANP A 801:**

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

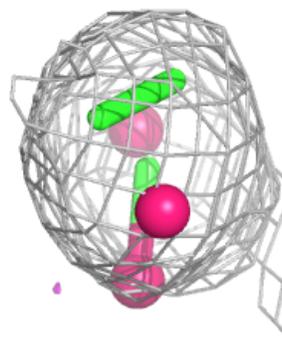
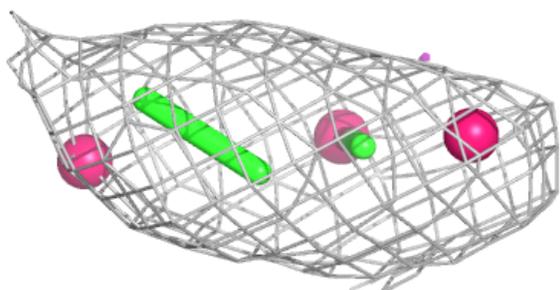
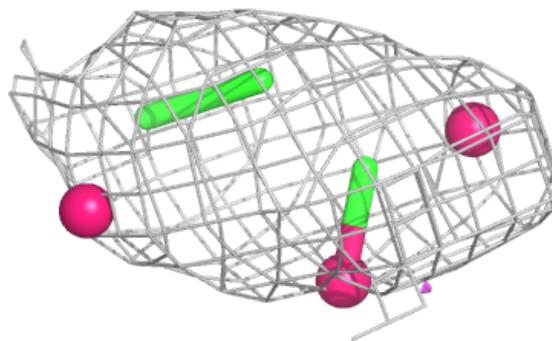
**Electron density around 3OH A 802:**

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



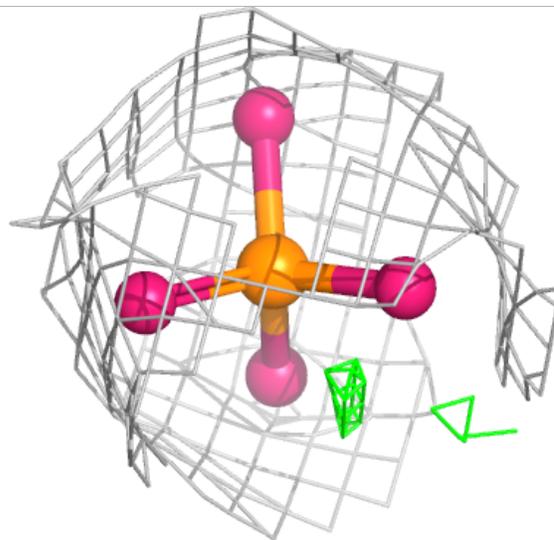
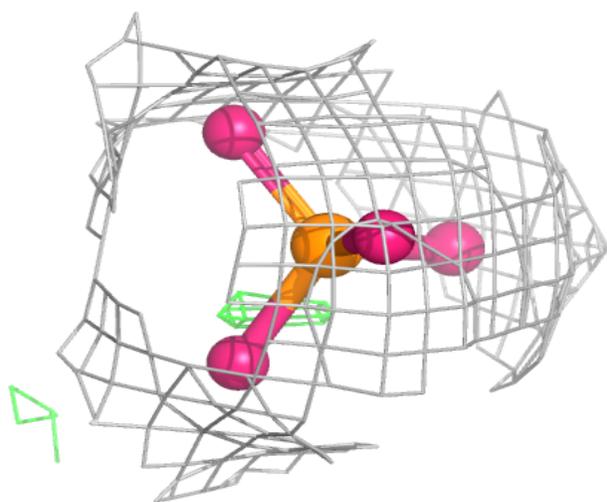
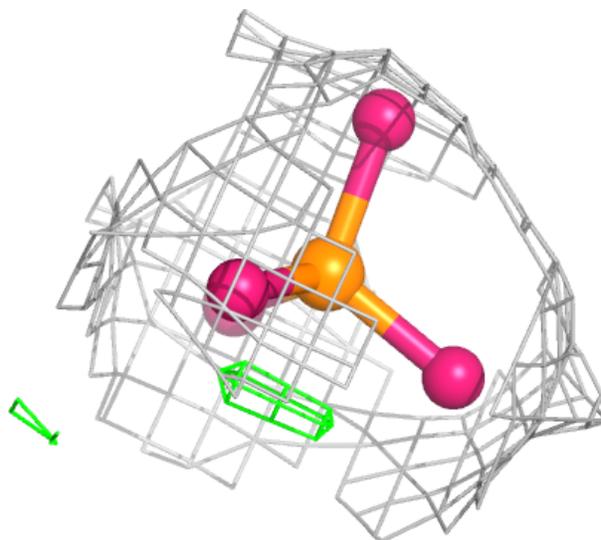
**Electron density around 3OH B 801:**

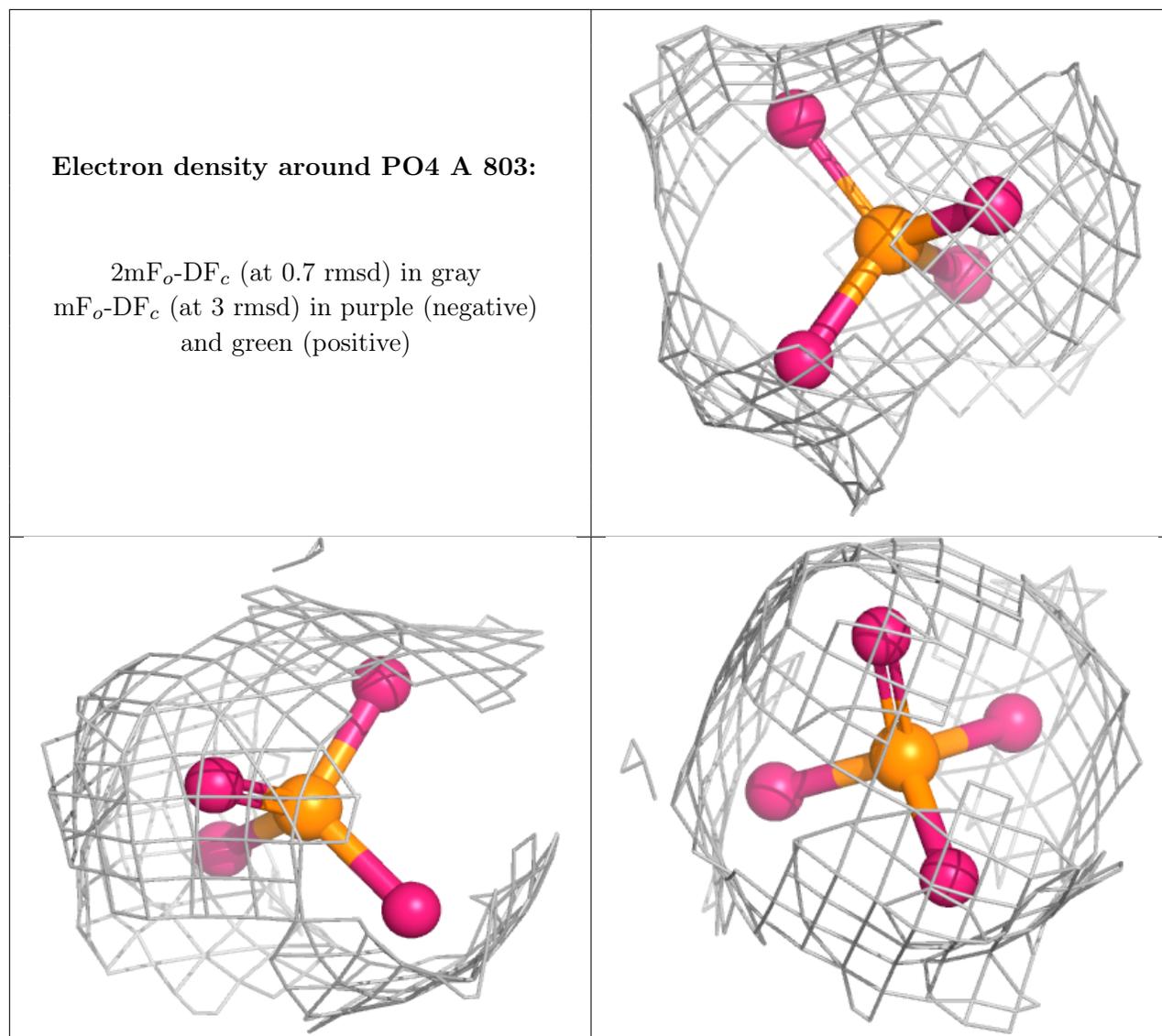
$2mF_o-DF_c$  (at 0.7 rmsd) in gray  
 $mF_o-DF_c$  (at 3 rmsd) in purple (negative)  
and green (positive)



**Electron density around PO4 B 802:**

$2mF_o-DF_c$  (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.