Full wwPDB X-ray Structure Validation Report ⓘ

Jun 24, 2025 – 03:14 pm BST

PDB ID	:	6HXH / pdb_00006hxh
Title	:	Structure of the human ATP citrate lyase holoenzyme in complex with citrate, coenzyme A and Mg.ADP
Authors	:	Verstraete, K.; Verschueren, K.
Deposited on	:	2018-10-17
Resolution	:	3.30 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:

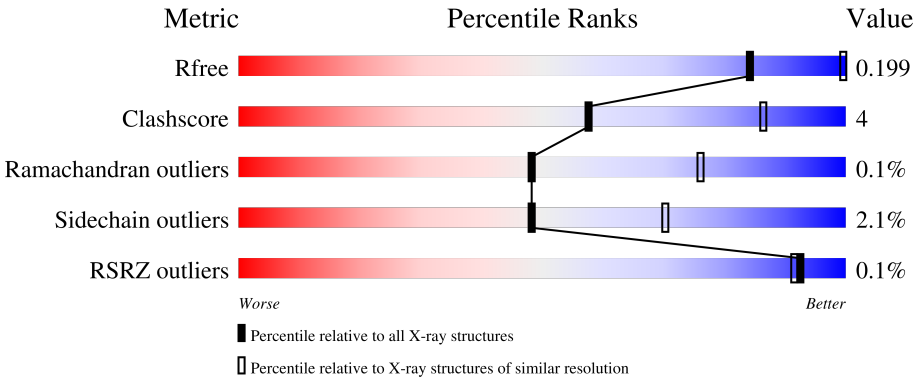
MolProbity	:	4-5-2 with Phenix2.0rc1
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	2.0rc1
EDS	:	3.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.003 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.44

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 3.30 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	1085 (3.32-3.28)
Clashscore	180529	1128 (3.32-3.28)
Ramachandran outliers	177936	1125 (3.32-3.28)
Sidechain outliers	177891	1124 (3.32-3.28)
RSRZ outliers	164620	1085 (3.32-3.28)

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 <=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	1050	90% 7% ••
1	B	1050	85% 12% ••
1	C	1050	85% 13% ••
1	D	1050	84% 13% ••
1	E	1050	85% 13% ••

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Mol	Chain	Length	Quality of chain
1	F	1050	
1	G	1050	
1	H	1050	

2 Entry composition (i)

There are 7 unique types of molecules in this entry. The entry contains 64968 atoms, of which 160 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 ATP-citrate synthase,Human ATP citrate lyase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	1033	Total	C	N	O	S	0	0	0
			8004	5123	1356	1479	46			
1	B	1033	Total	C	N	O	S	0	0	0
			8004	5123	1356	1479	46			
1	C	1033	Total	C	N	O	S	0	0	0
			8004	5123	1356	1479	46			
1	D	1033	Total	C	N	O	S	0	0	0
			8004	5123	1356	1479	46			
1	E	1033	Total	C	N	O	S	0	0	0
			8004	5123	1356	1479	46			
1	F	1033	Total	C	N	O	S	0	0	0
			8004	5123	1356	1479	46			
1	G	1033	Total	C	N	O	S	0	0	0
			8004	5123	1356	1479	46			
1	H	1033	Total	C	N	O	S	0	0	0
			8004	5123	1356	1479	46			

There are 24 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	485	PRO	-	linker	UNP P53396
A	486	MET	-	linker	UNP P53396
A	487	GLY	-	linker	UNP P53396
B	485	PRO	-	linker	UNP P53396
B	486	MET	-	linker	UNP P53396
B	487	GLY	-	linker	UNP P53396
C	485	PRO	-	linker	UNP P53396
C	486	MET	-	linker	UNP P53396
C	487	GLY	-	linker	UNP P53396
D	485	PRO	-	linker	UNP P53396
D	486	MET	-	linker	UNP P53396
D	487	GLY	-	linker	UNP P53396
E	485	PRO	-	linker	UNP P53396

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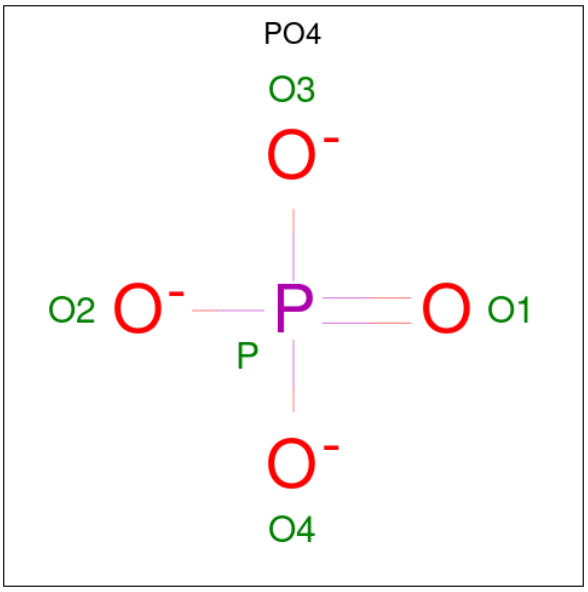
Chain	Residue	Modelled	Actual	Comment	Reference
E	486	MET	-	linker	UNP P53396
E	487	GLY	-	linker	UNP P53396
F	485	PRO	-	linker	UNP P53396
F	486	MET	-	linker	UNP P53396
F	487	GLY	-	linker	UNP P53396
G	485	PRO	-	linker	UNP P53396
G	486	MET	-	linker	UNP P53396
G	487	GLY	-	linker	UNP P53396
H	485	PRO	-	linker	UNP P53396
H	486	MET	-	linker	UNP P53396
H	487	GLY	-	linker	UNP P53396

- Molecule 2 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

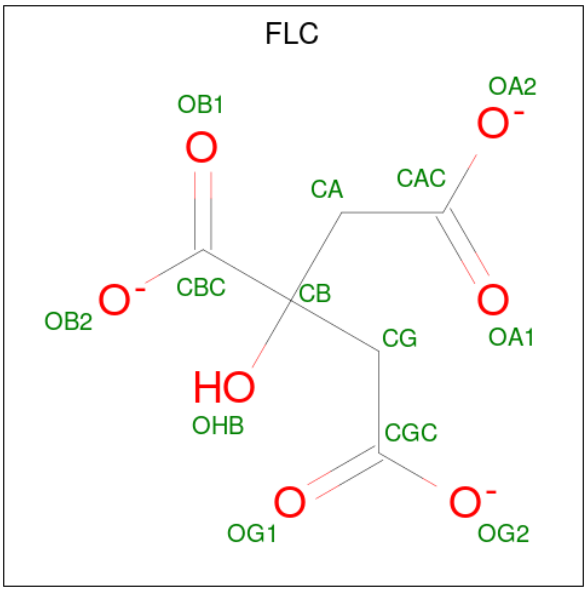
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	2	Total Mg 2 2	0	0
2	B	2	Total Mg 2 2	0	0
2	C	2	Total Mg 2 2	0	0
2	D	2	Total Mg 2 2	0	0
2	E	2	Total Mg 2 2	0	0
2	F	2	Total Mg 2 2	0	0
2	G	2	Total Mg 2 2	0	0
2	H	2	Total Mg 2 2	0	0

- Molecule 3 is PHOSPHATE ION (CCD ID: PO4) (formula: O_4P) (labeled as "Ligand of Interest" by depositor).



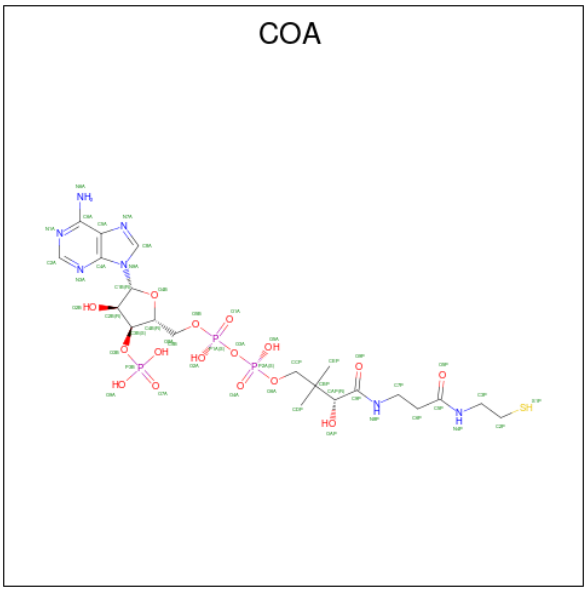
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total O P 5 4 1	0	0
3	B	1	Total O P 5 4 1	0	0
3	C	1	Total O P 5 4 1	0	0
3	D	1	Total O P 5 4 1	0	0
3	E	1	Total O P 5 4 1	0	0
3	F	1	Total O P 5 4 1	0	0
3	G	1	Total O P 5 4 1	0	0
3	H	1	Total O P 5 4 1	0	0

- Molecule 4 is CITRATE ANION (CCD ID: FLC) (formula: $C_6H_5O_7$).



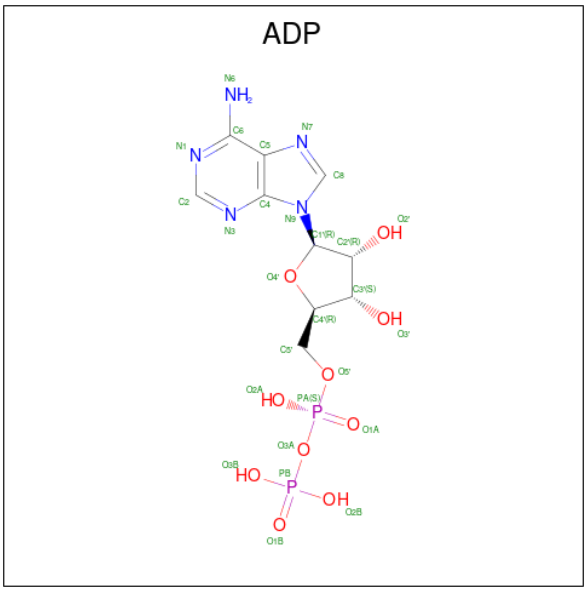
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total C H O 18 6 5 7	0	0
4	B	1	Total C H O 18 6 5 7	0	0
4	C	1	Total C H O 18 6 5 7	0	0
4	D	1	Total C H O 18 6 5 7	0	0
4	E	1	Total C H O 18 6 5 7	0	0
4	F	1	Total C H O 18 6 5 7	0	0
4	G	1	Total C H O 18 6 5 7	0	0
4	H	1	Total C H O 18 6 5 7	0	0

- Molecule 5 is COENZYME A (CCD ID: COA) (formula: $C_{21}H_{36}N_7O_{16}P_3S$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
5	A	1	Total	C	N	O	P	S	0	0
			48	21	7	16	3	1		
5	A	1	Total	C	N	O	P	S	0	0
			48	21	7	16	3	1		
5	C	1	Total	C	N	O	P	S	0	0
			48	21	7	16	3	1		
5	D	1	Total	C	N	O	P	S	0	0
			48	21	7	16	3	1		
5	E	1	Total	C	N	O	P	S	0	0
			48	21	7	16	3	1		
5	F	1	Total	C	N	O	P	S	0	0
			48	21	7	16	3	1		
5	G	1	Total	C	N	O	P	S	0	0
			48	21	7	16	3	1		
5	H	1	Total	C	N	O	P	S	0	0
			48	21	7	16	3	1		

- Molecule 6 is ADENOSINE-5'-DIPHOSPHATE (CCD ID: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
6	A	1	Total	C	H	N	O	P	0	0
			42	10	15	5	10	2		
6	B	1	Total	C	H	N	O	P	0	0
			42	10	15	5	10	2		
6	C	1	Total	C	H	N	O	P	0	0
			42	10	15	5	10	2		
6	D	1	Total	C	H	N	O	P	0	0
			42	10	15	5	10	2		
6	E	1	Total	C	H	N	O	P	0	0
			42	10	15	5	10	2		
6	F	1	Total	C	H	N	O	P	0	0
			42	10	15	5	10	2		
6	G	1	Total	C	H	N	O	P	0	0
			42	10	15	5	10	2		
6	H	1	Total	C	H	N	O	P	0	0
			42	10	15	5	10	2		

- Molecule 7 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	A	2	Total	O	0	0
			2	2		
7	B	2	Total	O	0	0
			2	2		
7	C	2	Total	O	0	0
			2	2		
7	D	2	Total	O	0	0
			2	2		

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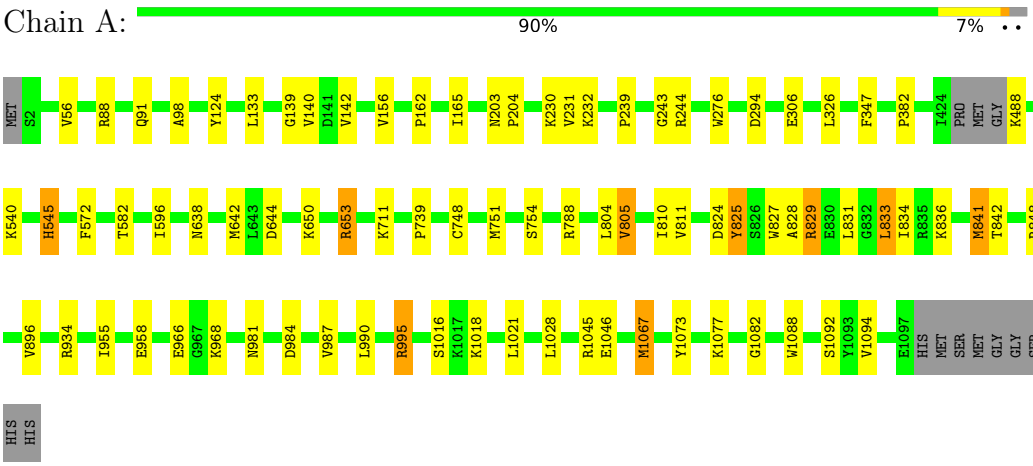
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	E	2	Total O 2 2	0	0
7	F	2	Total O 2 2	0	0
7	G	2	Total O 2 2	0	0
7	H	2	Total O 2 2	0	0

3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density (RSRZ > 2). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

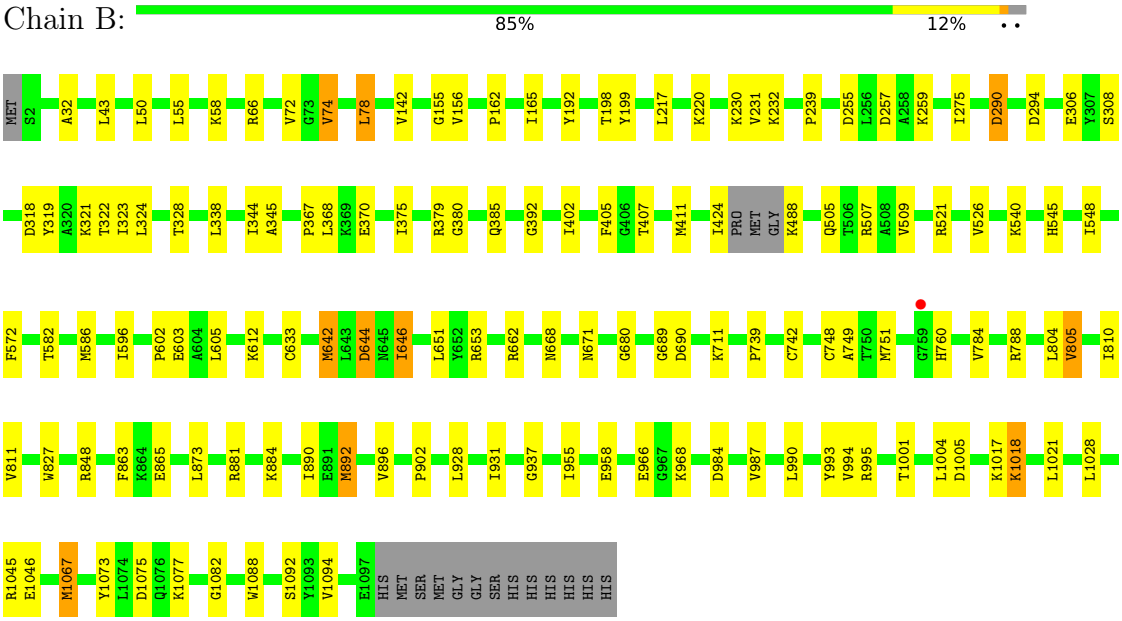
• Molecule 1: ATP-citrate synthase,Human ATP citrate lyase

Chain A:



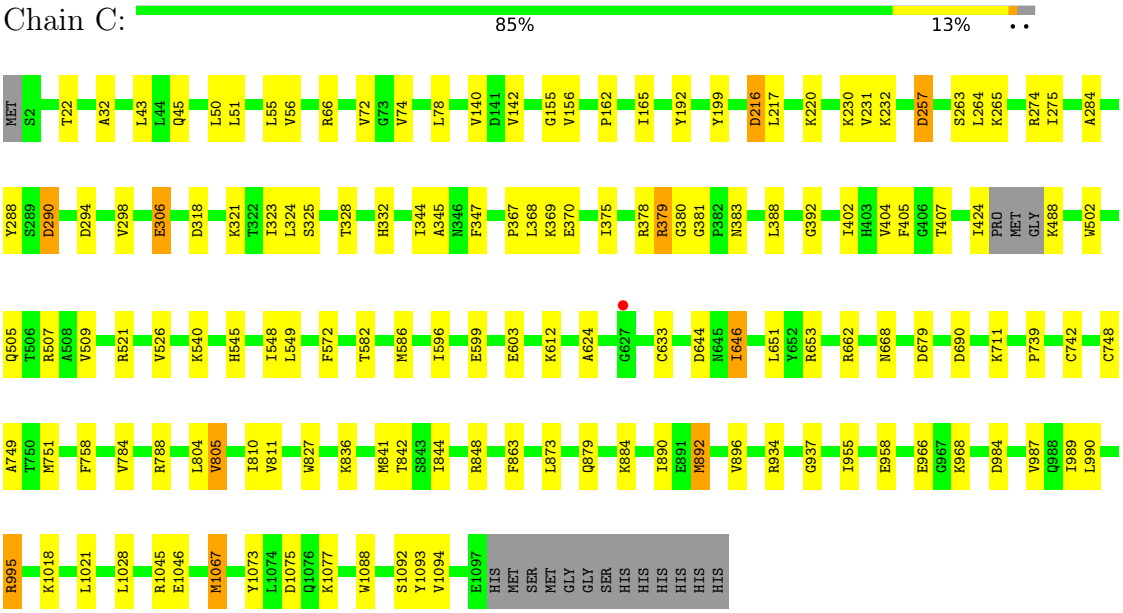
• Molecule 1: ATP-citrate synthase,Human ATP citrate lyase

Chain B:



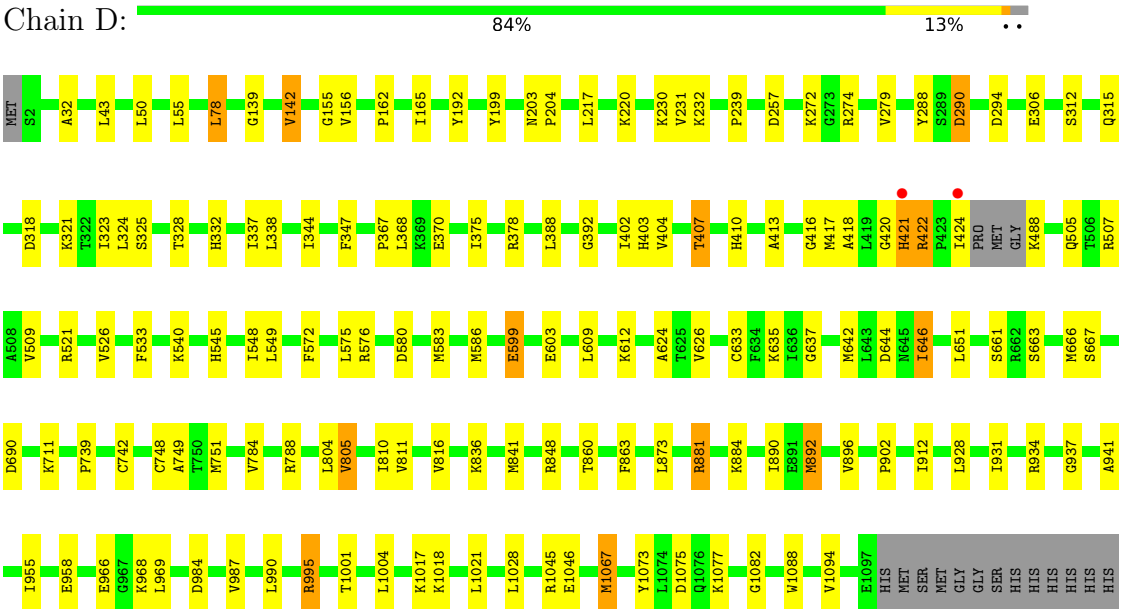
• Molecule 1: ATP-citrate synthase,Human ATP citrate lyase

Chain C:



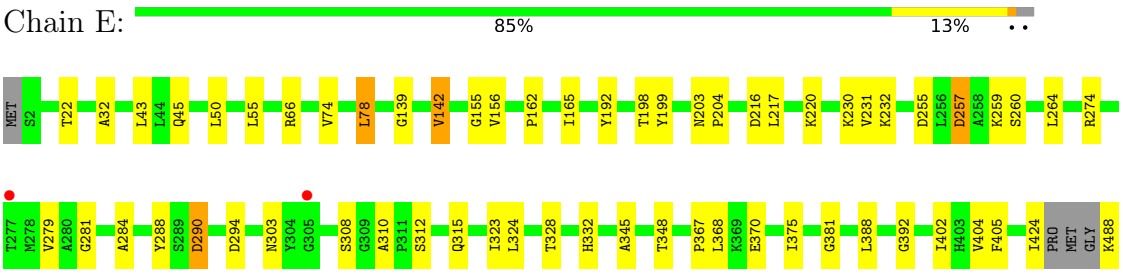
• Molecule 1: ATP-citrate synthase,Human ATP citrate lyase

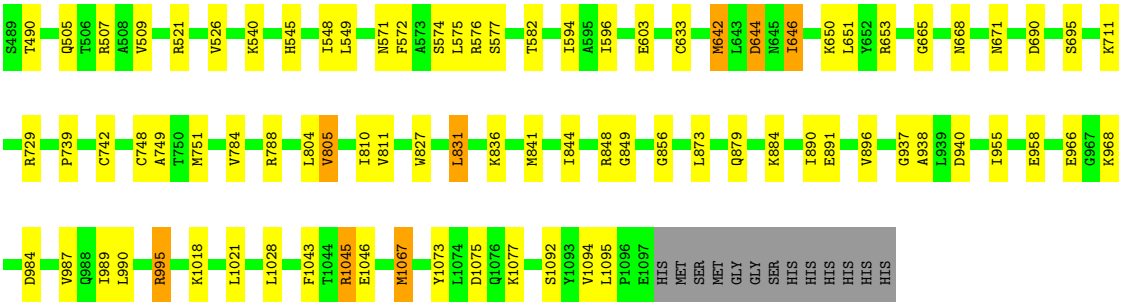
Chain D:



• Molecule 1: ATP-citrate synthase,Human ATP citrate lyase

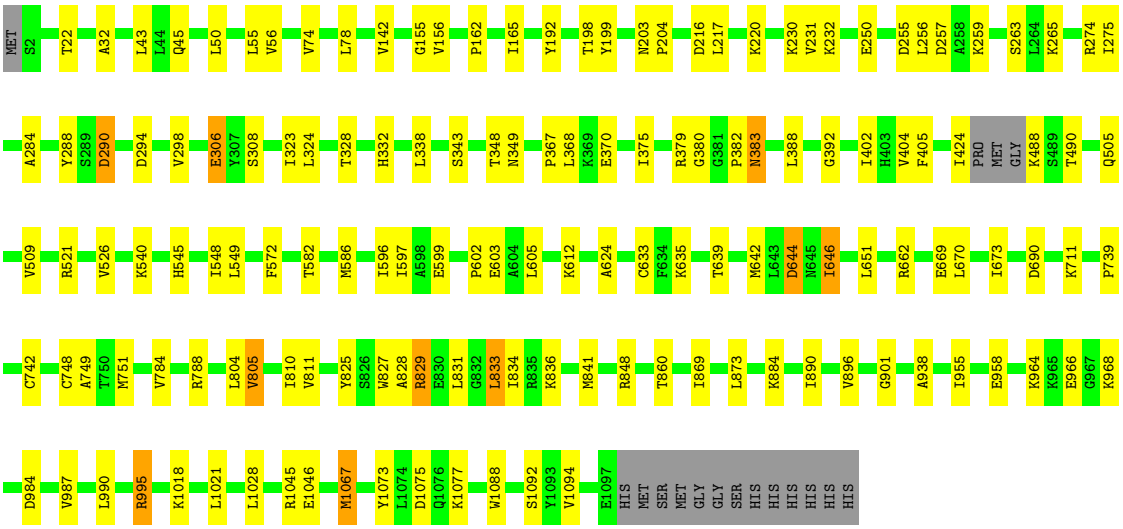
Chain E:





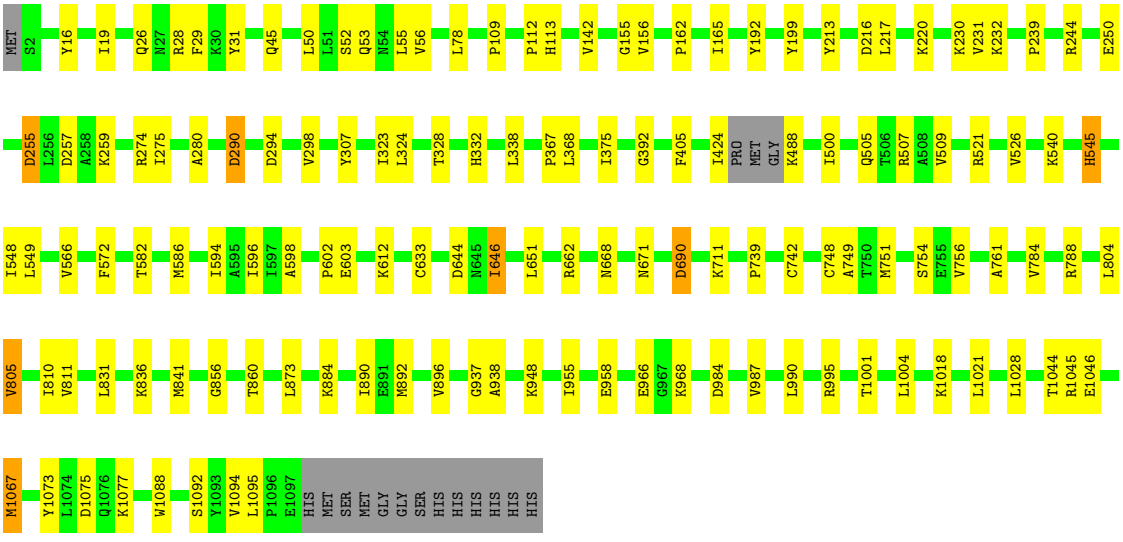
• Molecule 1: ATP-citrate synthase,Human ATP citrate lyase

Chain F:



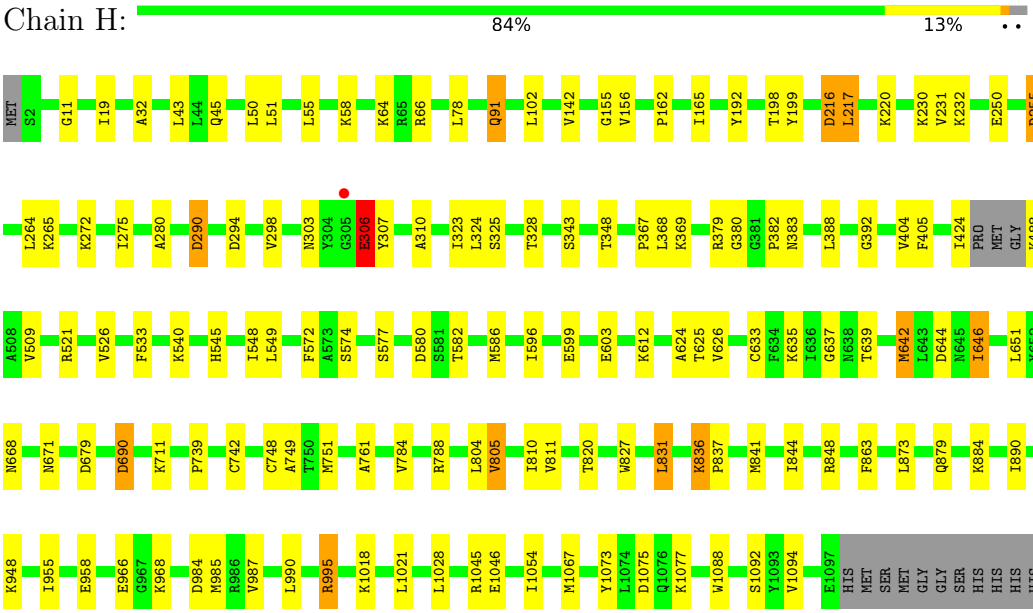
• Molecule 1: ATP-citrate synthase,Human ATP citrate lyase

Chain G:



• Molecule 1: ATP-citrate synthase,Human ATP citrate lyase

Chain H:


84%
13%
MET S2 G11 I19 A32 L43 L44 Q45 L50 L51 L55 K58 K64 R65 R66 L78 Q91 L102 V142 G155 V156 P162 I165 Y192 T198 Y199 D216 L217 K220 K230 V231 K232 E250 D255 L256 D257 A258 K259
L264 K265 K272 I275 A280 D290 D294 V298 N303 Y304 G305 E306 Y307 A310 I323 L324 S325 T328 S343 T348 P367 L368 K369 R379 G380 G381 P382 N383 L388 G392 V404 F405 I424 PRO MET GLY K488 Q505 T506 R507
A508 V509 R521 V526 F533 K540 H545 I548 L549 F572 A573 S574 S577 D580 S581 T582 M586 I596 E599 E603 K612 A624 T625 V626 C633 F634 K635 I636 G637 N638 T639 M642 L643 D644 N645 I646 L651 Y652 R653 R662
N668 N671 D679 D690 K711 P739 C742 C748 A749 T750 M751 A761 V784 R788 L804 V805 I810 V811 T820 W827 L831 K836 P837 M841 I844 R848 F863 L873 Q879 K884 I890 V896 G937
K948 I955 E958 E966 G967 K968 D984 M985 R986 V987 L990 R995 K1018 L1021 L1028 R1045 E1046 I1054 M1067 Y1073 L1074 D1075 Q1076 K1077 W1088 S1092 Y1093 V1094 E1097 HIS MET SER MET GLY GLY SER HIS HIS HIS HIS HIS HIS

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 1	Depositor
Cell constants a, b, c, α, β, γ	150.36Å 154.01Å 154.09Å 91.53° 110.04° 107.46°	Depositor
Resolution (Å)	48.46 – 3.30 48.46 – 3.30	Depositor EDS
% Data completeness (in resolution range)	95.6 (48.46-3.30) 95.6 (48.46-3.30)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.34 (at 3.33Å)	Xtriage
Refinement program	BUSTER 2.10.2	Depositor
R, R_{free}	0.156 , 0.187 0.174 , 0.199	Depositor DCC
R_{free} test set	8668 reflections (4.92%)	wwPDB-VP
Wilson B-factor (Å^2)	112.5	Xtriage
Anisotropy	0.184	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 98.3	EDS
L-test for twinning[2]	$< \|L\| > = 0.47$, $< L^2 > = 0.30$	Xtriage
Estimated twinning fraction	0.043 for -h,-l,-k	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	64968	wwPDB-VP
Average B, all atoms (Å^2)	127.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.53% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ 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, COA, FLC, ADP, PO4

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	0.76	2/8177 (0.0%)	1.12	15/11065 (0.1%)
1	B	0.90	5/8177 (0.1%)	1.39	30/11065 (0.3%)
1	C	0.86	3/8177 (0.0%)	1.39	40/11065 (0.4%)
1	D	0.92	7/8177 (0.1%)	1.42	44/11065 (0.4%)
1	E	0.89	3/8177 (0.0%)	1.40	35/11065 (0.3%)
1	F	0.86	2/8177 (0.0%)	1.38	32/11065 (0.3%)
1	G	0.85	2/8177 (0.0%)	1.38	38/11065 (0.3%)
1	H	0.85	4/8177 (0.0%)	1.39	46/11065 (0.4%)
All	All	0.87	28/65416 (0.0%)	1.36	280/88520 (0.3%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1
1	C	0	1
1	D	0	1
1	E	0	1
1	F	0	1
All	All	0	5

All (28) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	1067	MET	SD-CE	12.95	2.12	1.79
1	B	1067	MET	SD-CE	12.45	2.10	1.79
1	B	892	MET	SD-CE	10.88	2.06	1.79
1	G	1067	MET	SD-CE	10.65	2.06	1.79
1	E	1067	MET	SD-CE	10.54	2.06	1.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1067	MET	SD-CE	10.26	2.05	1.79
1	C	1067	MET	SD-CE	10.24	2.05	1.79
1	D	892	MET	SD-CE	9.96	2.04	1.79
1	F	1067	MET	SD-CE	9.89	2.04	1.79
1	H	642	MET	SD-CE	7.09	1.97	1.79
1	D	306	GLU	CA-C	6.02	1.60	1.52
1	D	422	ARG	CA-C	5.89	1.60	1.52
1	B	1018	LYS	CA-C	5.88	1.57	1.52
1	E	642	MET	SD-CE	5.86	1.94	1.79
1	H	1067	MET	SD-CE	5.86	1.94	1.79
1	C	892	MET	SD-CE	5.80	1.94	1.79
1	D	421	HIS	CA-C	5.50	1.65	1.52
1	H	820	THR	C-N	5.49	1.37	1.32
1	E	1043	PHE	CA-C	-5.45	1.46	1.52
1	G	598	ALA	CA-C	5.43	1.60	1.52
1	B	642	MET	SD-CE	5.33	1.92	1.79
1	C	140	VAL	CA-C	5.21	1.58	1.52
1	F	690	ASP	CA-C	5.15	1.59	1.52
1	H	1054	ILE	CA-C	5.13	1.59	1.52
1	D	642	MET	SD-CE	5.10	1.92	1.79
1	B	411	MET	SD-CE	-5.05	1.67	1.79
1	A	841	MET	SD-CE	5.02	1.92	1.79
1	D	816	VAL	CA-C	5.01	1.57	1.52

All (280) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	D	407	THR	CA-C-N	10.48	134.32	120.28
1	D	407	THR	C-N-CA	10.48	134.32	120.28
1	D	421	HIS	N-CA-C	9.03	123.59	113.21
1	D	290	ASP	CA-CB-CG	8.45	121.05	112.60
1	F	488	LYS	CA-C-N	8.40	132.66	120.82
1	F	488	LYS	C-N-CA	8.40	132.66	120.82
1	B	290	ASP	CA-CB-CG	8.36	120.96	112.60
1	E	488	LYS	CA-C-N	8.25	132.45	120.82
1	E	488	LYS	C-N-CA	8.25	132.45	120.82
1	E	290	ASP	CA-CB-CG	8.18	120.78	112.60
1	D	488	LYS	CA-C-N	8.00	132.49	121.05
1	D	488	LYS	C-N-CA	8.00	132.49	121.05
1	F	290	ASP	CA-CB-CG	7.85	120.45	112.60
1	H	290	ASP	CA-CB-CG	7.80	120.40	112.60
1	G	290	ASP	CA-CB-CG	7.80	120.40	112.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	156	VAL	CA-C-N	-7.75	110.34	122.67
1	A	156	VAL	C-N-CA	-7.75	110.34	122.67
1	C	290	ASP	CA-CB-CG	7.38	119.98	112.60
1	C	488	LYS	CA-C-N	7.33	131.15	120.82
1	C	488	LYS	C-N-CA	7.33	131.15	120.82
1	F	662	ARG	CA-C-N	7.33	131.20	120.95
1	F	662	ARG	C-N-CA	7.33	131.20	120.95
1	G	488	LYS	CA-C-N	7.25	131.05	120.82
1	G	488	LYS	C-N-CA	7.25	131.05	120.82
1	D	644	ASP	CA-CB-CG	7.11	119.71	112.60
1	G	644	ASP	CA-CB-CG	7.05	119.65	112.60
1	F	216	ASP	CA-CB-CG	6.96	119.56	112.60
1	D	749	ALA	CA-C-N	6.92	129.55	120.28
1	D	749	ALA	C-N-CA	6.92	129.55	120.28
1	B	488	LYS	CA-C-N	6.92	130.57	120.82
1	B	488	LYS	C-N-CA	6.92	130.57	120.82
1	H	216	ASP	CA-CB-CG	6.88	119.48	112.60
1	H	488	LYS	CA-C-N	6.72	130.30	120.82
1	H	488	LYS	C-N-CA	6.72	130.30	120.82
1	F	644	ASP	CA-CB-CG	6.69	119.29	112.60
1	C	644	ASP	CA-CB-CG	6.63	119.23	112.60
1	H	749	ALA	CA-C-N	6.61	129.14	120.28
1	H	749	ALA	C-N-CA	6.61	129.14	120.28
1	E	192	TYR	CA-C-N	6.58	129.33	120.65
1	E	192	TYR	C-N-CA	6.58	129.33	120.65
1	H	644	ASP	CA-CB-CG	6.58	119.17	112.60
1	E	156	VAL	CA-C-N	-6.57	111.26	122.56
1	E	156	VAL	C-N-CA	-6.57	111.26	122.56
1	E	257	ASP	CA-CB-CG	6.54	119.14	112.60
1	C	1045	ARG	CA-C-N	6.52	129.34	120.54
1	C	1045	ARG	C-N-CA	6.52	129.34	120.54
1	F	749	ALA	CA-C-N	6.50	129.64	120.28
1	F	749	ALA	C-N-CA	6.50	129.64	120.28
1	G	216	ASP	CA-CB-CG	6.45	119.05	112.60
1	B	749	ALA	CA-C-N	6.42	129.53	120.28
1	B	749	ALA	C-N-CA	6.42	129.53	120.28
1	B	662	ARG	CA-C-N	6.42	129.94	120.95
1	B	662	ARG	C-N-CA	6.42	129.94	120.95
1	E	749	ALA	CA-C-N	6.39	129.48	120.28
1	E	749	ALA	C-N-CA	6.39	129.48	120.28
1	D	257	ASP	CA-CB-CG	6.38	118.98	112.60
1	A	488	LYS	CA-C-N	6.38	129.81	120.82

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	488	LYS	C-N-CA	6.38	129.81	120.82
1	F	383	ASN	CA-CB-CG	6.38	118.98	112.60
1	D	156	VAL	CA-C-N	-6.33	112.14	122.65
1	D	156	VAL	C-N-CA	-6.33	112.14	122.65
1	B	230	LYS	CA-C-N	6.33	128.53	120.56
1	B	230	LYS	C-N-CA	6.33	128.53	120.56
1	H	64	LYS	N-CA-C	6.33	119.12	111.40
1	H	156	VAL	CA-C-N	-6.29	111.74	122.56
1	H	156	VAL	C-N-CA	-6.29	111.74	122.56
1	E	230	LYS	CA-C-N	6.26	128.45	120.56
1	E	230	LYS	C-N-CA	6.26	128.45	120.56
1	G	192	TYR	CA-C-N	6.25	128.89	120.65
1	G	192	TYR	C-N-CA	6.25	128.89	120.65
1	G	230	LYS	CA-C-N	6.20	128.37	120.56
1	G	230	LYS	C-N-CA	6.20	128.37	120.56
1	C	230	LYS	CA-C-N	6.18	128.35	120.56
1	C	230	LYS	C-N-CA	6.18	128.35	120.56
1	B	644	ASP	CA-CB-CG	6.17	118.77	112.60
1	C	749	ALA	CA-C-N	6.15	128.52	120.28
1	C	749	ALA	C-N-CA	6.15	128.52	120.28
1	D	1045	ARG	CA-C-N	6.13	128.81	120.54
1	D	1045	ARG	C-N-CA	6.13	128.81	120.54
1	G	1045	ARG	CA-C-N	6.11	128.78	120.54
1	G	1045	ARG	C-N-CA	6.11	128.78	120.54
1	F	257	ASP	CA-CB-CG	6.10	118.70	112.60
1	E	644	ASP	CA-CB-CG	6.08	118.68	112.60
1	F	1045	ARG	CA-C-N	6.05	128.71	120.54
1	F	1045	ARG	C-N-CA	6.05	128.71	120.54
1	G	749	ALA	CA-C-N	6.03	128.96	120.28
1	G	749	ALA	C-N-CA	6.03	128.96	120.28
1	D	1075	ASP	CA-CB-CG	5.96	118.56	112.60
1	H	64	LYS	CA-C-N	-5.95	112.03	122.62
1	H	64	LYS	C-N-CA	-5.95	112.03	122.62
1	C	937	GLY	CA-C-N	5.95	128.53	120.38
1	C	937	GLY	C-N-CA	5.95	128.53	120.38
1	B	257	ASP	CA-CB-CG	5.94	118.54	112.60
1	E	937	GLY	CA-C-N	5.93	128.51	120.38
1	E	937	GLY	C-N-CA	5.93	128.51	120.38
1	F	156	VAL	CA-C-N	-5.93	112.36	122.56
1	F	156	VAL	C-N-CA	-5.93	112.36	122.56
1	A	139	GLY	N-CA-C	5.93	120.65	112.52
1	B	1045	ARG	CA-C-N	5.93	128.55	120.54

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	1045	ARG	C-N-CA	5.93	128.55	120.54
1	B	156	VAL	CA-C-N	-5.90	112.41	122.56
1	B	156	VAL	C-N-CA	-5.90	112.41	122.56
1	B	937	GLY	CA-C-N	5.89	128.46	120.38
1	B	937	GLY	C-N-CA	5.89	128.46	120.38
1	B	984	ASP	CA-CB-CG	5.88	118.48	112.60
1	D	230	LYS	CA-C-N	5.84	127.91	120.56
1	D	230	LYS	C-N-CA	5.84	127.91	120.56
1	H	1045	ARG	CA-C-N	5.83	128.41	120.54
1	H	1045	ARG	C-N-CA	5.83	128.41	120.54
1	A	644	ASP	CA-CB-CG	5.76	118.36	112.60
1	C	257	ASP	CA-CB-CG	5.76	118.36	112.60
1	D	192	TYR	CA-C-N	5.76	128.25	120.65
1	D	192	TYR	C-N-CA	5.76	128.25	120.65
1	H	580	ASP	CA-CB-CG	5.76	118.36	112.60
1	H	192	TYR	CA-C-N	5.73	128.21	120.65
1	H	192	TYR	C-N-CA	5.73	128.21	120.65
1	C	192	TYR	CA-C-N	5.72	128.20	120.65
1	C	192	TYR	C-N-CA	5.72	128.20	120.65
1	D	421	HIS	CA-CB-CG	5.72	119.52	113.80
1	C	1075	ASP	CA-CB-CG	5.71	118.31	112.60
1	H	230	LYS	CA-C-N	5.71	127.75	120.56
1	H	230	LYS	C-N-CA	5.71	127.75	120.56
1	D	239	PRO	O-C-N	5.70	123.83	121.15
1	B	1005	ASP	CA-C-N	5.68	127.83	120.44
1	B	1005	ASP	C-N-CA	5.68	127.83	120.44
1	D	984	ASP	CA-CB-CG	5.68	118.28	112.60
1	D	937	GLY	CA-C-N	5.67	128.14	120.38
1	D	937	GLY	C-N-CA	5.67	128.14	120.38
1	F	230	LYS	CA-C-N	5.66	127.69	120.56
1	F	230	LYS	C-N-CA	5.66	127.69	120.56
1	E	984	ASP	CA-CB-CG	5.62	118.22	112.60
1	D	580	ASP	CA-CB-CG	5.61	118.21	112.60
1	G	984	ASP	CA-CB-CG	5.61	118.21	112.60
1	H	626	VAL	N-CA-C	-5.60	105.15	113.39
1	G	257	ASP	CA-CB-CG	5.60	118.20	112.60
1	F	192	TYR	CA-C-N	5.60	128.04	120.65
1	F	192	TYR	C-N-CA	5.60	128.04	120.65
1	F	1075	ASP	CA-CB-CG	5.60	118.20	112.60
1	H	662	ARG	CA-C-N	5.58	128.76	120.95
1	H	662	ARG	C-N-CA	5.58	128.76	120.95
1	B	192	TYR	CA-C-N	5.56	127.99	120.65

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	192	TYR	C-N-CA	5.56	127.99	120.65
1	G	156	VAL	CA-C-N	-5.53	113.04	122.56
1	G	156	VAL	C-N-CA	-5.53	113.04	122.56
1	G	1075	ASP	CA-CB-CG	5.53	118.12	112.60
1	B	690	ASP	CA-CB-CG	5.51	118.11	112.60
1	A	1045	ARG	CA-C-N	5.51	127.97	120.54
1	A	1045	ARG	C-N-CA	5.51	127.97	120.54
1	A	984	ASP	CA-CB-CG	5.49	118.09	112.60
1	B	1075	ASP	CA-CB-CG	5.47	118.07	112.60
1	G	690	ASP	CA-CB-CG	5.45	118.05	112.60
1	D	690	ASP	CA-CB-CG	5.45	118.05	112.60
1	G	662	ARG	CA-C-N	5.45	128.60	120.87
1	G	662	ARG	C-N-CA	5.45	128.60	120.87
1	D	912	ILE	CA-C-N	5.44	127.58	120.28
1	D	912	ILE	C-N-CA	5.44	127.58	120.28
1	H	533	PHE	CA-CB-CG	-5.44	108.36	113.80
1	D	272	LYS	CA-C-N	5.43	125.49	120.34
1	D	272	LYS	C-N-CA	5.43	125.49	120.34
1	B	239	PRO	O-C-N	5.41	123.69	121.15
1	H	250	GLU	CA-C-N	5.39	127.50	120.28
1	H	250	GLU	C-N-CA	5.39	127.50	120.28
1	D	533	PHE	CA-CB-CG	-5.39	108.41	113.80
1	A	230	LYS	CA-C-N	5.38	127.34	120.56
1	A	230	LYS	C-N-CA	5.38	127.34	120.56
1	H	937	GLY	CA-C-N	5.38	127.75	120.38
1	H	937	GLY	C-N-CA	5.38	127.75	120.38
1	G	239	PRO	O-C-N	5.38	123.68	121.15
1	E	260	SER	N-CA-C	5.38	117.36	109.24
1	C	758	PHE	CA-C-N	5.37	126.06	119.99
1	C	758	PHE	C-N-CA	5.37	126.06	119.99
1	E	1075	ASP	CA-CB-CG	5.34	117.94	112.60
1	C	347	PHE	CA-CB-CG	5.33	119.13	113.80
1	G	948	LYS	CA-C-N	5.33	127.36	120.44
1	G	948	LYS	C-N-CA	5.33	127.36	120.44
1	G	937	GLY	CA-C-N	5.32	127.67	120.38
1	G	937	GLY	C-N-CA	5.32	127.67	120.38
1	H	19	ILE	N-CA-CB	5.31	116.32	110.53
1	H	306	GLU	N-CA-CB	-5.31	101.66	111.53
1	A	981	ASN	CA-CB-CG	5.30	117.90	112.60
1	G	1044	THR	N-CA-C	-5.29	103.41	110.55
1	A	239	PRO	N-CA-C	5.28	116.23	110.58
1	D	392	GLY	CA-C-N	5.27	127.66	120.54

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	D	392	GLY	C-N-CA	5.27	127.66	120.54
1	H	257	ASP	CA-CB-CG	5.27	117.87	112.60
1	E	571	ASN	N-CA-C	5.26	117.78	107.57
1	F	690	ASP	CA-CB-CG	5.26	117.86	112.60
1	C	690	ASP	CA-CB-CG	5.26	117.86	112.60
1	E	665	GLY	CA-C-N	5.25	127.84	120.28
1	E	665	GLY	C-N-CA	5.25	127.84	120.28
1	G	250	GLU	CA-C-N	5.25	127.31	120.28
1	G	250	GLU	C-N-CA	5.25	127.31	120.28
1	H	984	ASP	CA-CB-CG	5.25	117.85	112.60
1	F	256	LEU	CA-C-N	5.25	127.31	120.28
1	F	256	LEU	C-N-CA	5.25	127.31	120.28
1	E	1045	ARG	CA-C-N	5.25	128.69	120.82
1	E	1045	ARG	C-N-CA	5.25	128.69	120.82
1	D	599	GLU	CB-CG-CD	5.24	121.50	112.60
1	C	379	ARG	CA-C-N	5.23	126.74	121.35
1	C	379	ARG	C-N-CA	5.23	126.74	121.35
1	E	940	ASP	CA-CB-CG	5.23	117.83	112.60
1	H	690	ASP	CA-CB-CG	5.23	117.83	112.60
1	C	662	ARG	CA-C-N	5.23	128.19	120.82
1	C	662	ARG	C-N-CA	5.23	128.19	120.82
1	F	984	ASP	CA-CB-CG	5.23	117.83	112.60
1	E	849	GLY	N-CA-C	5.22	120.61	112.31
1	E	392	GLY	CA-C-N	5.22	127.58	120.54
1	E	392	GLY	C-N-CA	5.22	127.58	120.54
1	E	938	ALA	N-CA-C	5.21	117.63	111.33
1	A	825	TYR	CA-C-N	5.20	127.56	120.54
1	A	825	TYR	C-N-CA	5.20	127.56	120.54
1	D	941	ALA	CA-C-N	5.18	127.18	120.44
1	D	941	ALA	C-N-CA	5.18	127.18	120.44
1	G	602	PRO	CA-C-N	5.18	127.53	120.54
1	G	602	PRO	C-N-CA	5.18	127.53	120.54
1	C	325	SER	CA-C-N	5.17	127.21	120.28
1	C	325	SER	C-N-CA	5.17	127.21	120.28
1	F	250	GLU	CA-C-N	5.17	127.21	120.28
1	F	250	GLU	C-N-CA	5.17	127.21	120.28
1	H	303	ASN	N-CA-C	5.17	116.67	108.96
1	G	19	ILE	N-CA-CB	5.15	116.14	110.53
1	E	22	THR	CA-C-N	5.15	128.08	120.82
1	E	22	THR	C-N-CA	5.15	128.08	120.82
1	F	392	GLY	CA-C-N	5.15	127.49	120.54
1	F	392	GLY	C-N-CA	5.15	127.49	120.54

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	H	325	SER	CA-C-N	5.15	127.60	120.29
1	H	325	SER	C-N-CA	5.15	127.60	120.29
1	C	392	GLY	CA-C-N	5.14	127.48	120.54
1	C	392	GLY	C-N-CA	5.14	127.48	120.54
1	B	1017	LYS	N-CA-C	-5.14	104.71	111.96
1	B	290	ASP	CA-C-N	5.13	127.42	120.44
1	B	290	ASP	C-N-CA	5.13	127.42	120.44
1	C	156	VAL	CA-C-N	-5.13	113.74	122.56
1	C	156	VAL	C-N-CA	-5.13	113.74	122.56
1	E	690	ASP	CA-CB-CG	5.13	117.73	112.60
1	F	22	THR	CA-C-N	5.11	128.03	120.82
1	F	22	THR	C-N-CA	5.11	128.03	120.82
1	C	22	THR	CA-C-N	5.11	128.02	120.82
1	C	22	THR	C-N-CA	5.11	128.02	120.82
1	H	948	LYS	CA-C-N	5.11	127.08	120.44
1	H	948	LYS	C-N-CA	5.11	127.08	120.44
1	D	306	GLU	CA-C-N	5.10	130.92	121.94
1	D	306	GLU	C-N-CA	5.10	130.92	121.94
1	D	1017	LYS	CA-C-N	5.10	129.40	122.56
1	D	1017	LYS	C-N-CA	5.10	129.40	122.56
1	G	598	ALA	N-CA-C	5.10	117.95	110.30
1	D	325	SER	CA-C-N	5.09	127.52	120.29
1	D	325	SER	C-N-CA	5.09	127.52	120.29
1	C	51	LEU	CA-C-N	5.09	127.61	120.28
1	C	51	LEU	C-N-CA	5.09	127.61	120.28
1	G	290	ASP	CA-C-N	5.09	127.36	120.44
1	G	290	ASP	C-N-CA	5.09	127.36	120.44
1	G	938	ALA	N-CA-C	5.09	117.49	111.33
1	C	984	ASP	CA-CB-CG	5.09	117.69	112.60
1	H	1075	ASP	CA-CB-CG	5.09	117.69	112.60
1	C	216	ASP	CA-CB-CG	5.08	117.68	112.60
1	E	284	ALA	CA-C-N	5.07	128.43	120.82
1	E	284	ALA	C-N-CA	5.07	128.43	120.82
1	H	51	LEU	CA-C-N	5.06	127.57	120.28
1	H	51	LEU	C-N-CA	5.06	127.57	120.28
1	C	369	LYS	CA-C-N	5.06	127.06	120.28
1	C	369	LYS	C-N-CA	5.06	127.06	120.28
1	E	303	ASN	N-CA-C	5.06	116.76	109.07
1	B	392	GLY	CA-C-N	5.06	127.37	120.54
1	B	392	GLY	C-N-CA	5.06	127.37	120.54
1	H	392	GLY	CA-C-N	5.06	127.37	120.54
1	H	392	GLY	C-N-CA	5.06	127.37	120.54

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	H	369	LYS	CA-C-N	5.05	127.05	120.28
1	H	369	LYS	C-N-CA	5.05	127.05	120.28
1	E	695	SER	N-CA-C	-5.05	100.67	108.90
1	H	272	LYS	CA-C-N	5.04	125.13	120.34
1	H	272	LYS	C-N-CA	5.04	125.13	120.34
1	F	938	ALA	N-CA-C	5.04	117.42	111.33
1	C	290	ASP	CA-C-N	5.03	127.28	120.44
1	C	290	ASP	C-N-CA	5.03	127.28	120.44
1	G	392	GLY	CA-C-N	5.03	127.33	120.54
1	G	392	GLY	C-N-CA	5.03	127.33	120.54
1	F	901	GLY	O-C-N	5.02	126.79	121.77
1	D	420	GLY	CA-C-N	5.01	132.72	122.55
1	D	420	GLY	C-N-CA	5.01	132.72	122.55

There are no chirality outliers.

All (5) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	829	ARG	Sidechain
1	C	995	ARG	Sidechain
1	D	881	ARG	Sidechain
1	E	1045	ARG	Sidechain
1	F	829	ARG	Sidechain

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	8004	0	8058	59	0
1	B	8004	0	8058	71	0
1	C	8004	0	8054	78	0
1	D	8004	0	8055	99	0
1	E	8004	0	8056	81	0
1	F	8004	0	8057	84	0
1	G	8004	0	8058	78	0
1	H	8004	0	8058	78	0
2	A	2	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	B	2	0	0	0	0
2	C	2	0	0	0	0
2	D	2	0	0	0	0
2	E	2	0	0	0	0
2	F	2	0	0	0	0
2	G	2	0	0	0	0
2	H	2	0	0	0	0
3	A	5	0	0	0	0
3	B	5	0	0	0	0
3	C	5	0	0	0	0
3	D	5	0	0	0	0
3	E	5	0	0	0	0
3	F	5	0	0	0	0
3	G	5	0	0	0	0
3	H	5	0	0	0	0
4	A	13	5	5	0	0
4	B	13	5	5	1	0
4	C	13	5	5	0	0
4	D	13	5	5	0	0
4	E	13	5	5	0	0
4	F	13	5	5	1	0
4	G	13	5	5	0	0
4	H	13	5	5	0	0
5	A	96	0	64	0	0
5	C	48	0	32	1	0
5	D	48	0	32	0	0
5	E	48	0	32	0	0
5	F	48	0	32	0	0
5	G	48	0	32	0	0
5	H	48	0	32	0	0
6	A	27	15	12	1	0
6	B	27	15	12	0	0
6	C	27	15	12	0	0
6	D	27	15	12	0	0
6	E	27	15	12	2	0
6	F	27	15	12	1	0
6	G	27	15	12	1	0
6	H	27	15	12	1	0
7	A	2	0	0	0	0
7	B	2	0	0	0	0
7	C	2	0	0	0	0
7	D	2	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
7	E	2	0	0	0	0
7	F	2	0	0	0	0
7	G	2	0	0	0	0
7	H	2	0	0	0	0
All	All	64808	160	64846	572	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 4.

All (572) 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:1067:MET:SD	1:A:1067:MET:CE	2.05	1.45
1:D:892:MET:CE	1:D:892:MET:SD	2.04	1.45
1:F:1067:MET:SD	1:F:1067:MET:CE	2.04	1.44
1:C:1067:MET:SD	1:C:1067:MET:CE	2.05	1.43
1:E:1067:MET:SD	1:E:1067:MET:CE	2.05	1.43
1:B:892:MET:SD	1:B:892:MET:CE	2.06	1.42
1:G:1067:MET:SD	1:G:1067:MET:CE	2.06	1.42
1:B:1067:MET:SD	1:B:1067:MET:CE	2.10	1.39
1:D:1067:MET:CE	1:D:1067:MET:SD	2.11	1.38
1:F:383:ASN:ND2	1:F:827:TRP:HZ3	1.36	1.22
1:D:788:ARG:HD2	1:G:53:GLN:OE1	1.41	1.21
1:D:995:ARG:CD	1:E:729:ARG:HH11	1.48	1.19
1:D:805:VAL:HG22	1:D:810:ILE:HD11	1.23	1.18
1:C:805:VAL:HG22	1:C:810:ILE:HD11	1.22	1.16
1:F:805:VAL:HG22	1:F:810:ILE:HD11	1.26	1.16
1:H:805:VAL:HG22	1:H:810:ILE:HD11	1.24	1.14
1:E:805:VAL:HG22	1:E:810:ILE:HD11	1.27	1.11
1:D:995:ARG:HD3	1:E:729:ARG:HH11	1.13	1.10
1:B:805:VAL:HG22	1:B:810:ILE:HD11	1.24	1.09
1:G:294:ASP:OD2	1:G:788:ARG:NH2	1.85	1.09
1:A:805:VAL:HG22	1:A:810:ILE:HD11	1.25	1.08
1:G:805:VAL:HG22	1:G:810:ILE:HD11	1.23	1.07
1:E:294:ASP:OD2	1:E:788:ARG:NH2	1.86	1.07
1:F:294:ASP:OD2	1:F:788:ARG:NH2	1.87	1.07
1:F:383:ASN:ND2	1:F:827:TRP:CZ3	2.23	1.06
1:A:294:ASP:OD2	1:A:788:ARG:NH2	1.88	1.06
1:C:294:ASP:OD2	1:C:788:ARG:NH2	1.87	1.05
1:H:294:ASP:OD2	1:H:788:ARG:NH2	1.89	1.04
1:B:294:ASP:OD2	1:B:788:ARG:NH2	1.90	1.03

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:294:ASP:OD2	1:D:788:ARG:NH2	1.88	1.03
1:D:881:ARG:HG2	1:D:881:ARG:HH11	1.23	1.03
1:B:540:LYS:HE2	1:C:841:MET:HE2	1.38	1.02
1:D:575:LEU:HD12	1:D:576:ARG:N	1.78	0.98
1:D:788:ARG:HH11	1:G:52:SER:HB2	1.28	0.97
1:A:955:ILE:HG13	1:A:958:GLU:HG3	1.52	0.91
1:D:995:ARG:CD	1:E:729:ARG:NH1	2.34	0.90
1:G:955:ILE:HG13	1:G:958:GLU:HG3	1.54	0.90
1:H:955:ILE:HG13	1:H:958:GLU:HG3	1.54	0.89
1:D:995:ARG:HD3	1:E:729:ARG:NH1	1.86	0.89
1:H:265:LYS:HG3	1:H:306:GLU:HG2	1.55	0.88
1:G:53:GLN:HE21	1:G:109:PRO:HB3	1.39	0.88
1:D:421:HIS:HA	1:G:28:ARG:HB2	1.54	0.86
1:D:955:ILE:HG13	1:D:958:GLU:HG3	1.56	0.86
1:C:955:ILE:HG13	1:C:958:GLU:HG3	1.57	0.86
1:F:955:ILE:HG13	1:F:958:GLU:HG3	1.57	0.86
1:B:955:ILE:HG13	1:B:958:GLU:HG3	1.57	0.85
1:E:955:ILE:HG13	1:E:958:GLU:HG3	1.56	0.84
1:D:788:ARG:CD	1:G:53:GLN:OE1	2.24	0.84
1:D:416:GLY:HA2	1:D:421:HIS:HB2	1.64	0.80
1:F:1094:VAL:HG12	1:F:1094:VAL:O	1.81	0.80
1:F:383:ASN:HD21	1:F:827:TRP:HZ3	1.29	0.80
1:A:748:CYS:HA	1:A:751:MET:HE3	1.64	0.80
1:H:265:LYS:CG	1:H:306:GLU:HG2	2.10	0.80
1:C:711:LYS:HG3	1:C:810:ILE:HG22	1.65	0.79
1:D:788:ARG:NH1	1:G:52:SER:HB2	1.97	0.78
1:F:711:LYS:HG3	1:F:810:ILE:HG22	1.64	0.77
1:D:711:LYS:HG3	1:D:810:ILE:HG22	1.65	0.77
1:F:635:LYS:HE3	1:F:639:THR:O	1.84	0.77
1:H:711:LYS:HG3	1:H:810:ILE:HG22	1.66	0.77
1:G:711:LYS:HG3	1:G:810:ILE:HG22	1.65	0.77
1:B:711:LYS:HG3	1:B:810:ILE:HG22	1.66	0.77
1:H:310:ALA:HA	1:H:348:THR:HG23	1.66	0.75
1:D:416:GLY:CA	1:D:421:HIS:HB2	2.16	0.75
1:E:711:LYS:HG3	1:E:810:ILE:HG22	1.67	0.75
1:F:263:SER:OG	1:F:306:GLU:OE2	2.05	0.74
1:D:421:HIS:CA	1:G:28:ARG:HB2	2.17	0.74
1:A:711:LYS:HG3	1:A:810:ILE:HG22	1.68	0.74
1:A:382:PRO:HA	1:A:642:MET:HE2	1.69	0.73
1:H:66:ARG:HB2	6:H:1205:ADP:O2B	1.88	0.73
1:F:1092:SER:HB2	1:H:841:MET:HG3	1.70	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:881:ARG:HG2	1:B:881:ARG:HH21	1.53	0.72
1:C:45:GLN:HG3	1:E:751:MET:HG2	1.71	0.72
1:D:421:HIS:C	1:G:28:ARG:HB2	2.14	0.72
1:G:1094:VAL:HG12	1:G:1094:VAL:O	1.90	0.71
1:A:88:ARG:O	1:A:91:GLN:HG2	1.91	0.70
1:A:831:LEU:HD12	1:A:833:LEU:HD11	1.74	0.69
1:D:1094:VAL:HG12	1:D:1094:VAL:O	1.93	0.69
1:A:841:MET:HG3	1:C:1092:SER:HB2	1.74	0.69
1:E:1094:VAL:HG12	1:E:1094:VAL:O	1.93	0.68
1:A:545:HIS:H	1:A:545:HIS:CD2	2.11	0.68
1:C:1094:VAL:HG12	1:C:1094:VAL:O	1.91	0.68
1:G:545:HIS:H	1:G:545:HIS:CD2	2.10	0.67
1:C:653:ARG:NH2	1:C:679:ASP:O	2.28	0.66
1:F:829:ARG:HG2	1:F:834:ILE:HD11	1.77	0.66
1:B:1094:VAL:HG12	1:B:1094:VAL:O	1.96	0.66
1:G:294:ASP:CG	1:G:788:ARG:HH22	2.01	0.66
1:D:417:MET:HG2	1:D:422:ARG:O	1.97	0.64
1:A:829:ARG:HG2	1:A:834:ILE:HD11	1.77	0.64
1:F:635:LYS:CE	1:F:639:THR:O	2.44	0.64
1:D:410:HIS:HB2	1:D:413:ALA:HB2	1.78	0.64
1:F:349:ASN:ND2	1:F:383:ASN:OD1	2.31	0.64
1:H:58:LYS:HD2	1:H:66:ARG:NH1	2.12	0.64
1:A:934:ARG:HH12	1:D:1082:GLY:HA2	1.63	0.63
1:H:58:LYS:HD2	1:H:66:ARG:HH11	1.64	0.63
1:E:294:ASP:CG	1:E:788:ARG:HH22	2.02	0.63
1:F:841:MET:HG3	1:H:1092:SER:HB2	1.79	0.63
1:A:56:VAL:HG21	6:A:1205:ADP:C6	2.33	0.63
1:B:1092:SER:HB2	1:D:841:MET:HG3	1.81	0.62
1:A:1094:VAL:HG12	1:A:1094:VAL:O	1.98	0.62
1:E:505:GLN:HG3	1:E:572:PHE:CG	2.33	0.62
1:G:244:ARG:HG3	1:G:754:SER:OG	1.98	0.62
1:C:294:ASP:CG	1:C:788:ARG:HH22	2.04	0.62
1:H:1094:VAL:HG12	1:H:1094:VAL:O	2.01	0.61
1:E:841:MET:HG3	1:G:1092:SER:HB2	1.82	0.61
1:D:805:VAL:CG2	1:D:810:ILE:HD11	2.16	0.61
1:D:663:SER:HB3	1:D:666:MET:HB2	1.81	0.61
1:E:290:ASP:HA	1:E:748:CYS:HB3	1.83	0.61
1:D:294:ASP:OD1	1:D:294:ASP:O	2.19	0.61
1:C:383:ASN:OD1	1:C:827:TRP:HZ3	1.84	0.60
1:F:294:ASP:CG	1:F:788:ARG:HH22	2.04	0.60
1:H:635:LYS:HE3	1:H:637:GLY:O	2.02	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:805:VAL:CG2	1:C:810:ILE:HD11	2.15	0.60
1:E:310:ALA:HA	1:E:348:THR:HG23	1.82	0.60
1:C:263:SER:OG	1:C:306:GLU:OE2	2.20	0.59
1:D:505:GLN:HG3	1:D:572:PHE:CG	2.38	0.59
1:A:540:LYS:HE2	1:D:841:MET:HE2	1.84	0.58
1:F:582:THR:HG21	1:F:596:ILE:HD11	1.86	0.58
1:D:290:ASP:HA	1:D:748:CYS:HB3	1.86	0.58
1:D:344:ILE:HG12	1:D:407:THR:HG22	1.85	0.58
1:B:294:ASP:CG	1:B:788:ARG:HH22	2.07	0.57
1:C:896:VAL:HG21	1:C:990:LEU:HD11	1.87	0.57
1:C:1067:MET:CE	1:C:1067:MET:HB2	2.35	0.57
1:D:896:VAL:HG21	1:D:990:LEU:HD11	1.86	0.57
1:A:896:VAL:HG21	1:A:990:LEU:HD11	1.86	0.57
1:D:873:LEU:HD22	1:D:890:ILE:HG21	1.87	0.57
1:G:290:ASP:HA	1:G:748:CYS:HB3	1.86	0.57
1:A:825:TYR:CZ	1:A:829:ARG:HD2	2.39	0.57
1:C:345:ALA:HB3	1:C:381:GLY:HA3	1.86	0.56
1:C:1088:TRP:CD1	1:C:1093:TYR:HH	2.23	0.56
1:A:545:HIS:CD2	1:A:545:HIS:N	2.73	0.56
1:F:290:ASP:HA	1:F:748:CYS:HB3	1.85	0.56
1:D:881:ARG:HG2	1:D:881:ARG:NH1	2.02	0.56
1:F:1018:LYS:HB3	1:F:1021:LEU:HG	1.87	0.56
1:B:290:ASP:HA	1:B:748:CYS:HB3	1.88	0.56
1:F:382:PRO:HA	1:F:642:MET:HE2	1.88	0.56
1:B:896:VAL:HG21	1:B:990:LEU:HD11	1.88	0.56
1:C:873:LEU:HD22	1:C:890:ILE:HG21	1.89	0.55
1:G:545:HIS:CD2	1:G:545:HIS:N	2.73	0.55
1:B:1067:MET:CE	1:B:1067:MET:HB2	2.35	0.55
1:C:505:GLN:HG3	1:C:572:PHE:CG	2.42	0.55
1:C:72:VAL:HG12	1:C:74:VAL:HG22	1.89	0.55
1:E:294:ASP:OD1	1:E:294:ASP:O	2.25	0.55
1:A:827:TRP:NE1	1:A:831:LEU:HD11	2.22	0.55
1:B:1082:GLY:HA2	1:C:934:ARG:HH12	1.69	0.55
1:D:788:ARG:NH1	1:G:52:SER:CB	2.69	0.55
1:G:582:THR:HG23	1:G:594:ILE:HG21	1.87	0.55
1:C:1067:MET:CE	1:C:1067:MET:CB	2.85	0.55
1:G:582:THR:HG21	1:G:596:ILE:HD11	1.89	0.55
1:G:1018:LYS:HB3	1:G:1021:LEU:HG	1.89	0.55
1:E:1018:LYS:HB3	1:E:1021:LEU:HG	1.88	0.54
1:E:1067:MET:CE	1:E:1067:MET:HB2	2.37	0.54
1:E:1092:SER:HB2	1:G:841:MET:HG3	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:1067:MET:CE	1:G:1067:MET:CB	2.86	0.54
1:A:98:ALA:HB1	1:A:243:GLY:HA3	1.90	0.54
1:F:896:VAL:HG21	1:F:990:LEU:HD11	1.89	0.54
1:G:1067:MET:CE	1:G:1067:MET:HB2	2.37	0.54
1:E:216:ASP:HB2	6:E:1205:ADP:O1A	2.07	0.54
1:G:873:LEU:HD22	1:G:890:ILE:HG21	1.89	0.54
1:A:1082:GLY:HA2	1:D:934:ARG:HH12	1.71	0.54
1:D:575:LEU:HD12	1:D:576:ARG:CA	2.38	0.54
1:F:56:VAL:HG11	6:F:1205:ADP:N7	2.23	0.54
1:H:290:ASP:HA	1:H:748:CYS:HB3	1.88	0.54
1:H:1018:LYS:HB3	1:H:1021:LEU:HG	1.89	0.54
1:F:505:GLN:HG3	1:F:572:PHE:CG	2.43	0.53
1:G:244:ARG:HG3	1:G:754:SER:CB	2.38	0.53
1:D:231:VAL:HG23	1:D:232:LYS:N	2.24	0.53
1:F:294:ASP:OD1	1:F:294:ASP:O	2.25	0.53
1:B:324:LEU:HD22	1:B:368:LEU:HD21	1.90	0.53
1:G:280:ALA:HB2	1:G:307:TYR:CZ	2.44	0.53
1:B:848:ARG:HG2	1:D:1088:TRP:CE2	2.43	0.53
1:C:45:GLN:CG	1:E:751:MET:HG2	2.39	0.53
1:C:290:ASP:HA	1:C:748:CYS:HB3	1.90	0.53
1:D:1018:LYS:HB3	1:D:1021:LEU:HG	1.90	0.53
1:E:281:GLY:HA2	1:E:308:SER:HB3	1.91	0.53
1:A:1067:MET:CE	1:A:1067:MET:HB2	2.39	0.53
1:F:324:LEU:HD22	1:F:368:LEU:HD21	1.91	0.53
1:G:805:VAL:CG2	1:G:810:ILE:HD11	2.16	0.53
1:H:668:ASN:HA	1:H:671:ASN:ND2	2.24	0.53
1:A:848:ARG:HG2	1:C:1088:TRP:CE2	2.44	0.52
1:B:1073:TYR:OH	1:B:1077:LYS:HE2	2.09	0.52
1:C:45:GLN:CB	1:E:751:MET:HG2	2.40	0.52
1:E:1067:MET:CE	1:E:1067:MET:CB	2.87	0.52
1:A:1018:LYS:HB3	1:A:1021:LEU:HG	1.90	0.52
1:D:1067:MET:CE	1:D:1067:MET:HB2	2.40	0.52
1:E:873:LEU:HD22	1:E:890:ILE:HG21	1.91	0.52
1:H:896:VAL:HG21	1:H:990:LEU:HD11	1.91	0.52
1:C:1018:LYS:HB3	1:C:1021:LEU:HG	1.91	0.52
1:B:294:ASP:O	1:B:294:ASP:OD1	2.27	0.52
1:G:896:VAL:HG21	1:G:990:LEU:HD11	1.92	0.52
1:H:379:ARG:HG3	1:H:380:GLY:H	1.75	0.52
1:A:892:MET:HG3	1:B:863:PHE:HE1	1.74	0.52
1:B:345:ALA:HB2	1:B:379:ARG:NH2	2.24	0.52
1:E:1046:GLU:CD	1:E:1046:GLU:H	2.17	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:987:VAL:HG13	1:F:1028:LEU:HG	1.92	0.52
1:B:505:GLN:HG3	1:B:572:PHE:CG	2.45	0.52
1:B:1067:MET:CE	1:B:1067:MET:CB	2.88	0.52
1:C:379:ARG:HG3	1:C:380:GLY:N	2.25	0.52
1:H:582:THR:HG21	1:H:596:ILE:HD11	1.92	0.52
1:D:324:LEU:HD22	1:D:368:LEU:HD21	1.92	0.52
1:H:294:ASP:CG	1:H:788:ARG:HH22	2.07	0.52
1:H:873:LEU:HD22	1:H:890:ILE:HG21	1.91	0.52
1:C:45:GLN:HG3	1:E:751:MET:CG	2.38	0.52
1:D:378:ARG:HD3	1:D:378:ARG:C	2.35	0.52
1:F:255:ASP:OD1	1:F:259:LYS:HD2	2.10	0.52
1:C:294:ASP:OD1	1:C:294:ASP:O	2.28	0.51
1:D:788:ARG:HG2	1:G:52:SER:HB3	1.91	0.51
1:F:1067:MET:CE	1:F:1067:MET:CB	2.88	0.51
1:F:1067:MET:CE	1:F:1067:MET:HB2	2.39	0.51
1:A:1088:TRP:CE2	1:C:848:ARG:HG2	2.46	0.51
1:B:1018:LYS:HB3	1:B:1021:LEU:HG	1.91	0.51
1:H:596:ILE:O	1:H:625:THR:HG22	2.11	0.51
1:G:1046:GLU:CD	1:G:1046:GLU:H	2.19	0.51
1:H:348:THR:O	1:H:382:PRO:HD2	2.11	0.51
1:H:599:GLU:HA	1:H:624:ALA:HB2	1.92	0.51
1:D:635:LYS:HE3	1:D:637:GLY:O	2.10	0.51
1:C:987:VAL:HG13	1:C:1028:LEU:HG	1.93	0.51
1:E:324:LEU:HD22	1:E:368:LEU:HD21	1.92	0.51
1:G:294:ASP:O	1:G:294:ASP:OD1	2.28	0.51
1:A:1067:MET:CE	1:A:1067:MET:CB	2.89	0.51
1:F:873:LEU:HD22	1:F:890:ILE:HG21	1.93	0.51
1:A:995:ARG:HH11	1:A:995:ARG:HG2	1.76	0.50
1:A:294:ASP:OD1	1:A:294:ASP:O	2.28	0.50
1:D:575:LEU:HD12	1:D:575:LEU:C	2.34	0.50
1:E:987:VAL:HG13	1:E:1028:LEU:HG	1.93	0.50
1:A:1092:SER:HB2	1:C:841:MET:HG3	1.92	0.50
1:C:1046:GLU:CD	1:C:1046:GLU:H	2.20	0.50
1:H:255:ASP:OD1	1:H:259:LYS:HD2	2.11	0.50
1:F:231:VAL:HG23	1:F:232:LYS:N	2.25	0.50
1:H:1073:TYR:OH	1:H:1077:LYS:HE2	2.11	0.50
1:B:231:VAL:HG23	1:B:232:LYS:N	2.25	0.50
1:E:668:ASN:HA	1:E:671:ASN:ND2	2.27	0.50
1:A:825:TYR:CZ	1:A:829:ARG:CD	2.94	0.50
1:D:403:HIS:ND1	1:D:424:ILE:HG21	2.27	0.50
1:D:1073:TYR:OH	1:D:1077:LYS:HE2	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:748:CYS:HA	1:H:751:MET:HE3	1.94	0.50
1:E:231:VAL:HG23	1:E:232:LYS:N	2.26	0.50
1:F:642:MET:HE1	1:F:827:TRP:CH2	2.47	0.50
1:B:1088:TRP:CE2	1:D:848:ARG:HG2	2.47	0.49
1:E:257:ASP:HB2	1:E:264:LEU:HB2	1.93	0.49
1:F:1046:GLU:H	1:F:1046:GLU:CD	2.20	0.49
1:E:574:SER:OG	1:E:577:SER:OG	2.14	0.49
1:E:742:CYS:HB3	1:E:784:VAL:HG11	1.94	0.49
1:F:828:ALA:HA	1:F:833:LEU:HD12	1.93	0.49
1:A:347:PHE:HB3	1:A:638:ASN:HB3	1.93	0.49
1:B:646:ILE:HA	1:B:651:LEU:HD12	1.94	0.49
1:G:16:TYR:CD1	1:G:28:ARG:HD2	2.47	0.49
1:B:873:LEU:HD22	1:B:890:ILE:HG21	1.94	0.49
1:H:646:ILE:HA	1:H:651:LEU:HD12	1.94	0.49
1:H:324:LEU:HD22	1:H:368:LEU:HD21	1.93	0.49
1:B:1046:GLU:CD	1:B:1046:GLU:H	2.20	0.49
1:G:324:LEU:HD22	1:G:368:LEU:HD21	1.93	0.49
1:H:382:PRO:HA	1:H:642:MET:HE2	1.94	0.49
1:C:56:VAL:HG22	1:C:74:VAL:HA	1.95	0.49
1:E:1073:TYR:OH	1:E:1077:LYS:HE2	2.13	0.49
1:H:294:ASP:OD1	1:H:294:ASP:O	2.31	0.49
1:H:1046:GLU:CD	1:H:1046:GLU:H	2.19	0.49
1:H:306:GLU:O	1:H:306:GLU:HG3	2.06	0.49
1:A:827:TRP:CD1	1:A:831:LEU:HD11	2.48	0.49
1:D:1067:MET:CE	1:D:1067:MET:CB	2.91	0.48
1:F:1073:TYR:OH	1:F:1077:LYS:HE2	2.13	0.48
1:H:599:GLU:HG3	1:H:624:ALA:HB1	1.94	0.48
1:D:1046:GLU:H	1:D:1046:GLU:CD	2.21	0.48
1:H:955:ILE:CG1	1:H:958:GLU:HG3	2.37	0.48
1:H:987:VAL:HG13	1:H:1028:LEU:HG	1.95	0.48
1:H:574:SER:HG	1:H:577:SER:HG	1.59	0.48
5:C:1204:COA:C5A	1:D:969:LEU:HD22	2.43	0.48
1:H:635:LYS:HD2	1:H:639:THR:O	2.14	0.48
1:A:1046:GLU:H	1:A:1046:GLU:CD	2.20	0.48
1:F:831:LEU:HD12	1:F:833:LEU:HD11	1.96	0.48
1:C:199:TYR:HB3	1:C:220:LYS:HB2	1.96	0.48
1:E:955:ILE:CG1	1:E:958:GLU:HG3	2.38	0.48
1:B:987:VAL:HG13	1:B:1028:LEU:HG	1.95	0.47
1:C:32:ALA:HB1	1:C:43:LEU:HD11	1.95	0.47
1:C:324:LEU:HD22	1:C:368:LEU:HD21	1.94	0.47
1:E:255:ASP:OD1	1:E:259:LYS:HD2	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:50:LEU:HB3	1:F:78:LEU:HD13	1.96	0.47
1:F:348:THR:O	1:F:382:PRO:HD2	2.14	0.47
1:G:739:PRO:HG3	1:G:804:LEU:HD11	1.96	0.47
1:E:509:VAL:HG13	1:E:526:VAL:HG21	1.97	0.47
1:G:586:MET:HE3	1:G:612:LYS:HD3	1.96	0.47
1:C:231:VAL:HG23	1:C:232:LYS:N	2.30	0.47
1:D:575:LEU:CD1	1:D:576:ARG:N	2.65	0.47
1:E:540:LYS:HE2	1:H:841:MET:HE2	1.95	0.47
1:G:646:ILE:HA	1:G:651:LEU:HD12	1.95	0.47
1:H:231:VAL:HG23	1:H:232:LYS:N	2.29	0.47
1:B:805:VAL:CG2	1:B:810:ILE:HD11	2.18	0.47
1:C:344:ILE:HG12	1:C:407:THR:HG22	1.96	0.47
1:D:881:ARG:HH11	1:D:881:ARG:CG	2.07	0.47
1:E:162:PRO:HA	1:E:165:ILE:HD12	1.96	0.47
1:E:646:ILE:HA	1:E:651:LEU:HD12	1.96	0.47
1:A:1073:TYR:OH	1:A:1077:LYS:HE2	2.15	0.47
1:G:16:TYR:HD1	1:G:28:ARG:HD2	1.80	0.47
1:B:385:GLN:OE1	1:B:827:TRP:HH2	1.98	0.47
1:D:328:THR:HB	1:D:367:PRO:HB2	1.96	0.47
1:F:742:CYS:HB3	1:F:784:VAL:HG11	1.97	0.47
1:G:244:ARG:NH1	1:G:756:VAL:HG22	2.30	0.47
1:G:509:VAL:HG13	1:G:526:VAL:HG21	1.96	0.47
1:H:50:LEU:HB3	1:H:78:LEU:HD13	1.96	0.47
1:H:199:TYR:HB3	1:H:220:LYS:HB2	1.97	0.47
1:A:739:PRO:HG3	1:A:804:LEU:HD11	1.96	0.47
1:B:50:LEU:HB3	1:B:78:LEU:HD13	1.96	0.47
1:B:405:PHE:HZ	1:B:424:ILE:HG23	1.80	0.47
1:D:50:LEU:HB3	1:D:78:LEU:HD13	1.96	0.47
1:G:505:GLN:HG3	1:G:572:PHE:CG	2.49	0.47
1:G:1073:TYR:OH	1:G:1077:LYS:HE2	2.15	0.47
1:A:987:VAL:HG13	1:A:1028:LEU:HG	1.97	0.46
1:G:53:GLN:NE2	1:G:109:PRO:HB3	2.19	0.46
1:E:32:ALA:HB1	1:E:43:LEU:HD11	1.96	0.46
1:F:748:CYS:HA	1:F:751:MET:HE3	1.98	0.46
1:A:995:ARG:HG2	1:A:995:ARG:NH1	2.30	0.46
1:B:668:ASN:HA	1:B:671:ASN:ND2	2.30	0.46
1:E:748:CYS:HA	1:E:751:MET:HE3	1.97	0.46
1:D:646:ILE:HA	1:D:651:LEU:HD12	1.97	0.46
1:D:748:CYS:HA	1:D:751:MET:HE3	1.98	0.46
1:H:805:VAL:CG2	1:H:810:ILE:HD11	2.18	0.46
1:C:50:LEU:HB3	1:C:78:LEU:HD13	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:863:PHE:CE1	1:D:892:MET:HG3	2.51	0.46
1:G:748:CYS:HA	1:G:751:MET:HE3	1.98	0.46
1:C:748:CYS:HA	1:C:751:MET:HE3	1.97	0.46
1:D:739:PRO:HG3	1:D:804:LEU:HD11	1.98	0.46
1:E:575:LEU:HD12	1:E:576:ARG:HG3	1.97	0.46
1:E:650:LYS:CB	1:E:653:ARG:NH1	2.78	0.46
1:G:112:PRO:O	1:G:113:HIS:HB3	2.16	0.46
1:B:308:SER:HB2	4:B:1203:FLC:CGC	2.46	0.46
1:E:199:TYR:HB3	1:E:220:LYS:HB2	1.98	0.46
1:F:162:PRO:HA	1:F:165:ILE:HD12	1.98	0.46
1:H:668:ASN:HA	1:H:671:ASN:HD22	1.81	0.46
1:B:509:VAL:HG13	1:B:526:VAL:HG21	1.97	0.46
1:D:139:GLY:O	1:D:142:VAL:HG23	2.16	0.46
1:E:827:TRP:NE1	1:E:831:LEU:HD11	2.30	0.46
1:F:199:TYR:HB3	1:F:220:LYS:HB2	1.97	0.46
1:F:509:VAL:HG13	1:F:526:VAL:HG21	1.96	0.46
1:F:646:ILE:HA	1:F:651:LEU:HD12	1.97	0.46
1:G:50:LEU:HB3	1:G:78:LEU:HD13	1.97	0.46
1:G:255:ASP:OD1	1:G:259:LYS:HD2	2.16	0.46
1:A:805:VAL:CG2	1:A:810:ILE:HD11	2.19	0.45
1:C:344:ILE:O	1:C:668:ASN:HB3	2.16	0.45
1:D:413:ALA:HA	1:D:422:ARG:CZ	2.46	0.45
1:A:650:LYS:CB	1:A:653:ARG:HH11	2.29	0.45
1:B:748:CYS:HA	1:B:751:MET:HE3	1.97	0.45
1:B:881:ARG:HG2	1:B:881:ARG:NH2	2.28	0.45
1:C:599:GLU:HG3	1:C:624:ALA:HB1	1.98	0.45
1:E:50:LEU:HB3	1:E:78:LEU:HD13	1.98	0.45
1:E:896:VAL:HG21	1:E:990:LEU:HD11	1.97	0.45
1:F:521:ARG:HD2	1:F:633:CYS:O	2.16	0.45
1:F:841:MET:HE2	1:G:540:LYS:HE2	1.97	0.45
1:H:66:ARG:NH2	1:H:216:ASP:OD1	2.48	0.45
1:A:505:GLN:HG3	1:A:572:PHE:CG	2.51	0.45
1:D:32:ALA:HB1	1:D:43:LEU:HD11	1.99	0.45
1:E:966:GLU:HB3	1:E:968:LYS:HE3	1.98	0.45
1:G:405:PHE:HZ	1:G:424:ILE:HG23	1.81	0.45
1:G:987:VAL:HG13	1:G:1028:LEU:HG	1.97	0.45
1:A:955:ILE:CG1	1:A:958:GLU:HG3	2.37	0.45
1:A:1082:GLY:HA2	1:D:934:ARG:NH1	2.32	0.45
1:C:162:PRO:HA	1:C:165:ILE:HD12	1.99	0.45
1:C:646:ILE:HA	1:C:651:LEU:HD12	1.98	0.45
1:D:586:MET:HE3	1:D:612:LYS:HD3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:265:LYS:HB2	1:F:306:GLU:HG3	1.97	0.45
1:F:1088:TRP:CE2	1:H:848:ARG:HG2	2.51	0.45
1:E:582:THR:HG23	1:E:594:ILE:HG21	1.99	0.45
1:E:739:PRO:HG3	1:E:804:LEU:HD11	1.99	0.45
1:C:863:PHE:HE1	1:D:892:MET:HG3	1.82	0.45
1:H:742:CYS:HB3	1:H:784:VAL:HG11	1.99	0.45
1:D:583:MET:SD	1:D:609:LEU:HD23	2.57	0.45
1:G:56:VAL:HG21	6:G:1205:ADP:C6	2.52	0.45
1:H:653:ARG:NH2	1:H:679:ASP:O	2.43	0.45
1:A:892:MET:HG3	1:B:863:PHE:CE1	2.51	0.45
1:F:284:ALA:O	1:F:288:TYR:HD1	2.00	0.45
1:F:308:SER:HB2	4:F:1203:FLC:OG1	2.17	0.45
1:F:805:VAL:CG2	1:F:810:ILE:HD11	2.19	0.45
1:B:72:VAL:HG12	1:B:74:VAL:HG22	1.98	0.44
1:G:298:VAL:HG21	1:G:751:MET:HB3	1.99	0.44
1:B:345:ALA:HB2	1:B:379:ARG:HH22	1.82	0.44
1:B:586:MET:HE3	1:B:612:LYS:HD3	1.99	0.44
1:E:345:ALA:HB3	1:E:381:GLY:HA3	1.98	0.44
1:B:739:PRO:HG3	1:B:804:LEU:HD11	1.99	0.44
1:B:865:GLU:OE1	1:B:881:ARG:NH1	2.50	0.44
1:D:199:TYR:HB3	1:D:220:LYS:HB2	1.98	0.44
1:D:509:VAL:HG13	1:D:526:VAL:HG21	1.99	0.44
1:H:328:THR:HB	1:H:367:PRO:HB2	1.99	0.44
1:H:739:PRO:HG3	1:H:804:LEU:HD11	1.99	0.44
1:A:934:ARG:NH1	1:D:1082:GLY:HA2	2.31	0.44
1:C:1073:TYR:OH	1:C:1077:LYS:HE2	2.18	0.44
1:C:509:VAL:HG13	1:C:526:VAL:HG21	1.99	0.44
1:C:842:THR:HG21	1:D:902:PRO:HG3	1.99	0.44
1:G:860:THR:HG21	1:H:985:MET:HE3	2.00	0.44
1:A:966:GLU:HB3	1:A:968:LYS:HE3	1.98	0.44
1:B:379:ARG:HG3	1:B:380:GLY:N	2.32	0.44
1:C:739:PRO:HG3	1:C:804:LEU:HD11	1.99	0.44
1:C:955:ILE:CG1	1:C:958:GLU:HG3	2.39	0.44
1:C:989:ILE:HD11	1:D:860:THR:HG22	2.00	0.44
1:F:739:PRO:HG3	1:F:804:LEU:HD11	1.99	0.44
1:H:379:ARG:HG3	1:H:380:GLY:N	2.32	0.44
1:B:742:CYS:HB3	1:B:784:VAL:HG11	1.99	0.44
1:C:284:ALA:O	1:C:288:TYR:HD1	2.01	0.44
1:E:279:VAL:HG11	1:E:288:TYR:CD1	2.53	0.44
1:F:383:ASN:HA	1:F:827:TRP:HH2	1.82	0.44
1:A:827:TRP:HE1	1:A:831:LEU:HD11	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:58:LYS:HD2	1:B:66:ARG:NH1	2.33	0.44
1:B:582:THR:HG21	1:B:596:ILE:HD11	1.98	0.44
1:B:653:ARG:HH22	1:B:680:GLY:HA3	1.83	0.44
1:G:29:PHE:HA	1:G:31:TYR:CE2	2.52	0.44
1:H:91:GLN:HG2	1:H:102:LEU:HD12	1.99	0.44
1:A:231:VAL:HG23	1:A:232:LYS:N	2.32	0.43
1:F:343:SER:HB2	1:F:669:GLU:HB2	1.99	0.43
1:F:405:PHE:HZ	1:F:424:ILE:HG23	1.83	0.43
1:H:505:GLN:HG3	1:H:572:PHE:CG	2.53	0.43
1:B:642:MET:HE3	1:B:644:ASP:OD2	2.17	0.43
1:B:955:ILE:CG1	1:B:958:GLU:HG3	2.39	0.43
1:C:966:GLU:HB3	1:C:968:LYS:HE3	2.01	0.43
1:D:203:ASN:HA	1:D:204:PRO:HA	1.72	0.43
1:E:582:THR:HG21	1:E:596:ILE:HD11	1.99	0.43
1:G:199:TYR:HB3	1:G:220:LYS:HB2	1.99	0.43
1:H:521:ARG:HD2	1:H:633:CYS:O	2.18	0.43
1:A:825:TYR:OH	1:A:829:ARG:HD2	2.18	0.43
1:C:257:ASP:HB2	1:C:264:LEU:O	2.18	0.43
1:C:405:PHE:HZ	1:C:424:ILE:HG23	1.83	0.43
1:B:162:PRO:HA	1:B:165:ILE:HD12	1.99	0.43
1:C:367:PRO:HA	1:C:370:GLU:HB2	1.99	0.43
1:E:367:PRO:HA	1:E:370:GLU:HB2	2.01	0.43
1:C:502:TRP:CE3	1:C:502:TRP:C	2.97	0.43
1:C:521:ARG:HD2	1:C:633:CYS:O	2.18	0.43
1:F:995:ARG:HH11	1:F:995:ARG:HG2	1.84	0.43
1:H:298:VAL:HG21	1:H:751:MET:HB3	2.01	0.43
1:C:892:MET:HG3	1:D:863:PHE:CE1	2.53	0.43
1:E:805:VAL:CG2	1:E:810:ILE:HD11	2.20	0.43
1:F:995:ARG:HG2	1:F:995:ARG:NH1	2.34	0.43
1:G:162:PRO:HA	1:G:165:ILE:HD12	1.99	0.43
1:F:642:MET:HE1	1:F:827:TRP:CZ2	2.53	0.43
1:H:280:ALA:HB2	1:H:307:TYR:CZ	2.54	0.43
1:E:540:LYS:HA	1:E:549:LEU:HD23	2.01	0.43
1:F:642:MET:HE3	1:F:644:ASP:OD2	2.19	0.43
1:F:955:ILE:CG1	1:F:958:GLU:HG3	2.38	0.43
1:H:32:ALA:HB1	1:H:43:LEU:HD11	2.00	0.43
1:H:383:ASN:OD1	1:H:827:TRP:HZ3	2.02	0.43
1:H:586:MET:HE3	1:H:612:LYS:HD3	2.00	0.43
1:A:124:TYR:HE1	1:A:133:LEU:HD11	1.83	0.43
1:D:742:CYS:HB3	1:D:784:VAL:HG11	2.00	0.43
1:E:139:GLY:O	1:E:142:VAL:HG23	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:582:THR:HG21	1:A:596:ILE:HD11	2.01	0.43
1:D:347:PHE:HE1	1:D:626:VAL:HG23	1.84	0.43
1:E:1094:VAL:O	1:E:1094:VAL:CG1	2.65	0.43
1:F:328:THR:HB	1:F:367:PRO:HB2	2.01	0.43
1:G:742:CYS:HB3	1:G:784:VAL:HG11	2.00	0.43
1:D:599:GLU:HG3	1:D:624:ALA:HB1	2.01	0.42
1:B:928:LEU:HA	1:B:931:ILE:HD12	2.01	0.42
1:B:966:GLU:HB3	1:B:968:LYS:HE3	2.01	0.42
1:C:66:ARG:NH2	1:C:216:ASP:OD1	2.52	0.42
1:D:162:PRO:HA	1:D:165:ILE:HD12	2.01	0.42
1:F:599:GLU:HG3	1:F:624:ALA:HB1	2.01	0.42
1:G:231:VAL:HG23	1:G:232:LYS:N	2.35	0.42
1:H:257:ASP:HB2	1:H:264:LEU:O	2.19	0.42
1:C:844:ILE:HG22	1:C:879:GLN:NE2	2.34	0.42
1:D:375:ILE:HB	1:D:402:ILE:HG12	2.00	0.42
1:F:388:LEU:HD22	1:F:404:VAL:HG13	2.01	0.42
1:G:328:THR:HB	1:G:367:PRO:HB2	2.00	0.42
1:A:842:THR:HG21	1:B:902:PRO:HG3	2.00	0.42
1:B:344:ILE:HG12	1:B:407:THR:HG22	2.00	0.42
1:D:421:HIS:HA	1:G:28:ARG:CB	2.38	0.42
1:F:829:ARG:HG2	1:F:834:ILE:CD1	2.45	0.42
1:H:509:VAL:HG13	1:H:526:VAL:HG21	2.01	0.42
1:B:199:TYR:HB3	1:B:220:LYS:HB2	2.00	0.42
1:E:328:THR:HB	1:E:367:PRO:HB2	2.01	0.42
1:E:521:ARG:HD2	1:E:633:CYS:O	2.20	0.42
1:E:642:MET:HE3	1:E:644:ASP:OD2	2.19	0.42
1:B:521:ARG:HD2	1:B:633:CYS:O	2.19	0.42
1:C:298:VAL:HG21	1:C:751:MET:HB3	2.01	0.42
1:D:521:ARG:HD2	1:D:633:CYS:O	2.19	0.42
1:D:966:GLU:HB3	1:D:968:LYS:HE3	2.00	0.42
1:H:995:ARG:HG2	1:H:995:ARG:HH11	1.85	0.42
1:A:162:PRO:HA	1:A:165:ILE:HD12	2.01	0.42
1:A:244:ARG:HG3	1:A:754:SER:OG	2.20	0.42
1:B:328:THR:HB	1:B:367:PRO:HB2	2.01	0.42
1:B:375:ILE:HB	1:B:402:ILE:HG12	2.02	0.42
1:C:540:LYS:HA	1:C:549:LEU:HD23	2.02	0.42
1:D:928:LEU:HA	1:D:931:ILE:HD12	2.01	0.42
1:E:848:ARG:HG2	1:G:1088:TRP:CE2	2.54	0.42
1:F:670:LEU:HA	1:F:673:ILE:HD12	2.01	0.42
1:F:848:ARG:HG2	1:H:1088:TRP:CE2	2.54	0.42
1:B:993:TYR:CD1	1:B:993:TYR:C	2.97	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1001:THR:HB	1:B:1004:LEU:HB3	2.02	0.42
1:C:1094:VAL:O	1:C:1094:VAL:CG1	2.64	0.42
1:E:1067:MET:CE	1:E:1067:MET:CG	2.96	0.42
1:G:966:GLU:HB3	1:G:968:LYS:HE3	2.01	0.42
1:D:661:SER:HB3	1:D:667:SER:OG	2.20	0.42
1:E:388:LEU:HD22	1:E:404:VAL:HG13	2.01	0.42
1:E:995:ARG:NH1	1:E:995:ARG:HG2	2.35	0.42
1:F:298:VAL:HG21	1:F:751:MET:HB3	2.01	0.42
1:F:586:MET:HE3	1:F:612:LYS:HD3	2.00	0.42
1:G:521:ARG:HD2	1:G:633:CYS:O	2.20	0.42
1:G:690:ASP:HA	1:G:761:ALA:HB3	2.00	0.42
1:C:375:ILE:HB	1:C:402:ILE:HG12	2.03	0.41
1:E:856:GLY:H	1:G:1095:LEU:HD23	1.85	0.41
1:F:379:ARG:HG3	1:F:380:GLY:N	2.35	0.41
1:F:540:LYS:HA	1:F:549:LEU:HD23	2.01	0.41
1:F:966:GLU:HB3	1:F:968:LYS:HE3	2.01	0.41
1:H:11:GLY:HA3	1:H:217:LEU:HD22	2.02	0.41
1:H:642:MET:HE1	1:H:827:TRP:CH2	2.54	0.41
1:C:1067:MET:CE	1:C:1067:MET:CG	2.95	0.41
1:F:338:LEU:HB3	1:F:375:ILE:HG12	2.02	0.41
1:H:343:SER:O	1:H:379:ARG:NH1	2.53	0.41
1:A:828:ALA:HA	1:A:833:LEU:HD12	2.02	0.41
1:B:338:LEU:HB3	1:B:375:ILE:HG12	2.03	0.41
1:B:689:GLY:HA3	1:B:760:HIS:CD2	2.55	0.41
1:E:891:GLU:HA	1:F:869:ILE:HD11	2.02	0.41
1:E:989:ILE:HD11	1:F:860:THR:HG22	2.02	0.41
1:F:32:ALA:HB1	1:F:43:LEU:HD11	2.03	0.41
1:F:825:TYR:OH	1:F:829:ARG:HD2	2.20	0.41
1:F:1094:VAL:O	1:F:1094:VAL:CG1	2.54	0.41
1:H:405:PHE:HZ	1:H:424:ILE:HG23	1.85	0.41
1:D:987:VAL:HG13	1:D:1028:LEU:HG	2.02	0.41
1:E:955:ILE:HG13	1:E:958:GLU:CG	2.39	0.41
1:F:375:ILE:HB	1:F:402:ILE:HG12	2.01	0.41
1:B:318:ASP:HA	1:B:321:LYS:HG2	2.02	0.41
1:D:367:PRO:HA	1:D:370:GLU:HB2	2.01	0.41
1:D:540:LYS:HA	1:D:549:LEU:HD23	2.01	0.41
1:E:66:ARG:HB2	6:E:1205:ADP:O2B	2.20	0.41
1:F:367:PRO:HA	1:F:370:GLU:HB2	2.03	0.41
1:H:966:GLU:HB3	1:H:968:LYS:HE3	2.01	0.41
1:E:203:ASN:HA	1:E:204:PRO:HA	1.79	0.41
1:E:375:ILE:HB	1:E:402:ILE:HG12	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:279:VAL:HG11	1:D:288:TYR:CD1	2.56	0.41
1:D:337:ILE:HG21	1:D:418:ALA:HB1	2.02	0.41
1:F:203:ASN:HA	1:F:204:PRO:HA	1.97	0.41
1:G:26:GLN:HB2	1:G:213:TYR:CE2	2.56	0.41
1:A:276:TRP:CH2	1:A:326:LEU:HB3	2.56	0.41
1:B:255:ASP:OD1	1:B:259:LYS:HD2	2.20	0.41
1:C:274:ARG:HD2	1:C:332:HIS:CE1	2.55	0.41
1:C:586:MET:HE3	1:C:612:LYS:HD3	2.02	0.41
1:D:388:LEU:HD22	1:D:404:VAL:HG13	2.03	0.41
1:E:844:ILE:HG22	1:E:879:GLN:NE2	2.36	0.41
1:G:955:ILE:CG1	1:G:958:GLU:HG3	2.37	0.41
1:B:319:TYR:O	1:B:322:THR:HB	2.21	0.41
1:B:602:PRO:HD2	1:B:605:LEU:HD12	2.02	0.41
1:C:388:LEU:HD22	1:C:404:VAL:HG13	2.03	0.41
1:C:742:CYS:HB3	1:C:784:VAL:HG11	2.02	0.41
1:D:892:MET:CE	1:D:892:MET:CG	2.94	0.41
1:E:312:SER:OG	1:E:315:GLN:HG3	2.20	0.41
1:E:405:PHE:HZ	1:E:424:ILE:HG23	1.86	0.41
1:E:577:SER:HB3	1:F:964:LYS:NZ	2.36	0.41
1:G:338:LEU:HB3	1:G:375:ILE:HG12	2.03	0.41
1:G:540:LYS:HA	1:G:549:LEU:HD23	2.03	0.41
1:H:162:PRO:HA	1:H:165:ILE:HD12	2.03	0.41
1:H:388:LEU:HD22	1:H:404:VAL:HG13	2.02	0.41
1:H:540:LYS:HA	1:H:549:LEU:HD23	2.03	0.41
1:H:836:LYS:HA	1:H:837:PRO:HD3	1.89	0.41
1:H:844:ILE:HG22	1:H:879:GLN:NE2	2.36	0.41
1:B:32:ALA:HB1	1:B:43:LEU:HD11	2.01	0.41
1:F:274:ARG:HD2	1:F:332:HIS:CE1	2.56	0.41
1:G:274:ARG:HD2	1:G:332:HIS:CE1	2.56	0.41
1:G:892:MET:HG3	1:H:863:PHE:HE1	1.85	0.41
1:F:602:PRO:HD2	1:F:605:LEU:HD12	2.03	0.40
1:G:500:ILE:HG13	1:G:566:VAL:HG11	2.03	0.40
1:A:244:ARG:NH1	1:A:754:SER:OG	2.53	0.40
1:D:312:SER:OG	1:D:315:GLN:HG3	2.21	0.40
1:D:338:LEU:HB3	1:D:375:ILE:HG12	2.03	0.40
1:D:955:ILE:CG1	1:D:958:GLU:HG3	2.40	0.40
1:A:203:ASN:HA	1:A:204:PRO:HA	1.90	0.40
1:B:367:PRO:HA	1:B:370:GLU:HB2	2.02	0.40
1:C:582:THR:HG21	1:C:596:ILE:HD11	2.03	0.40
1:D:1001:THR:HB	1:D:1004:LEU:HB3	2.03	0.40
1:E:1095:LEU:HD23	1:G:856:GLY:H	1.87	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:1001:THR:HB	1:G:1004:LEU:HB3	2.04	0.40
1:H:690:ASP:HA	1:H:761:ALA:HB3	2.03	0.40
1:C:318:ASP:HA	1:C:321:LYS:HG2	2.03	0.40
1:C:328:THR:HB	1:C:367:PRO:HB2	2.03	0.40
1:C:378:ARG:HD3	1:C:378:ARG:C	2.47	0.40
1:D:274:ARG:HD2	1:D:332:HIS:CE1	2.56	0.40
1:D:318:ASP:HA	1:D:321:LYS:HG2	2.03	0.40
1:E:274:ARG:HD2	1:E:332:HIS:CE1	2.56	0.40
1:G:668:ASN:HA	1:G:671:ASN:ND2	2.36	0.40
1:H:827:TRP:NE1	1:H:831:LEU:HD11	2.37	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	1029/1050 (98%)	1013 (98%)	16 (2%)	0	100	100
1	B	1029/1050 (98%)	984 (96%)	44 (4%)	1 (0%)	48	76
1	C	1029/1050 (98%)	989 (96%)	39 (4%)	1 (0%)	48	76
1	D	1029/1050 (98%)	983 (96%)	45 (4%)	1 (0%)	48	76
1	E	1029/1050 (98%)	985 (96%)	43 (4%)	1 (0%)	48	76
1	F	1029/1050 (98%)	988 (96%)	40 (4%)	1 (0%)	48	76
1	G	1029/1050 (98%)	983 (96%)	45 (4%)	1 (0%)	48	76
1	H	1029/1050 (98%)	990 (96%)	38 (4%)	1 (0%)	48	76
All	All	8232/8400 (98%)	7915 (96%)	310 (4%)	7 (0%)	48	76

All (7) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	155	GLY
1	C	155	GLY
1	E	155	GLY
1	G	155	GLY
1	H	155	GLY
1	D	155	GLY
1	F	155	GLY

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	854/868 (98%)	840 (98%)	14 (2%)	58	76
1	B	854/868 (98%)	835 (98%)	19 (2%)	47	69
1	C	854/868 (98%)	837 (98%)	17 (2%)	50	71
1	D	854/868 (98%)	839 (98%)	15 (2%)	54	74
1	E	854/868 (98%)	834 (98%)	20 (2%)	45	68
1	F	854/868 (98%)	833 (98%)	21 (2%)	42	67
1	G	854/868 (98%)	836 (98%)	18 (2%)	48	70
1	H	854/868 (98%)	833 (98%)	21 (2%)	42	67
All	All	6832/6944 (98%)	6687 (98%)	145 (2%)	48	70

All (145) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	140	VAL
1	A	142	VAL
1	A	306	GLU
1	A	507	ARG
1	A	545	HIS
1	A	653	ARG
1	A	805	VAL
1	A	811	VAL
1	A	824	ASP

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Mol	Chain	Res	Type
1	A	833	LEU
1	A	836	LYS
1	A	884	LYS
1	A	995	ARG
1	A	1016	SER
1	B	55	LEU
1	B	74	VAL
1	B	78	LEU
1	B	142	VAL
1	B	198	THR
1	B	217	LEU
1	B	275	ILE
1	B	306	GLU
1	B	323	ILE
1	B	507	ARG
1	B	545	HIS
1	B	548	ILE
1	B	603	GLU
1	B	646	ILE
1	B	805	VAL
1	B	811	VAL
1	B	884	LYS
1	B	994	VAL
1	B	995	ARG
1	C	55	LEU
1	C	142	VAL
1	C	217	LEU
1	C	265	LYS
1	C	275	ILE
1	C	306	GLU
1	C	323	ILE
1	C	507	ARG
1	C	545	HIS
1	C	548	ILE
1	C	603	GLU
1	C	646	ILE
1	C	805	VAL
1	C	811	VAL
1	C	836	LYS
1	C	884	LYS
1	C	995	ARG
1	D	55	LEU

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Mol	Chain	Res	Type
1	D	78	LEU
1	D	142	VAL
1	D	217	LEU
1	D	323	ILE
1	D	507	ARG
1	D	545	HIS
1	D	548	ILE
1	D	603	GLU
1	D	646	ILE
1	D	805	VAL
1	D	811	VAL
1	D	836	LYS
1	D	884	LYS
1	D	995	ARG
1	E	45	GLN
1	E	55	LEU
1	E	74	VAL
1	E	78	LEU
1	E	142	VAL
1	E	198	THR
1	E	217	LEU
1	E	323	ILE
1	E	490	THR
1	E	507	ARG
1	E	545	HIS
1	E	548	ILE
1	E	603	GLU
1	E	646	ILE
1	E	805	VAL
1	E	811	VAL
1	E	831	LEU
1	E	836	LYS
1	E	884	LYS
1	E	995	ARG
1	F	45	GLN
1	F	55	LEU
1	F	74	VAL
1	F	142	VAL
1	F	198	THR
1	F	217	LEU
1	F	275	ILE
1	F	306	GLU

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Mol	Chain	Res	Type
1	F	323	ILE
1	F	490	THR
1	F	545	HIS
1	F	548	ILE
1	F	597	ILE
1	F	603	GLU
1	F	646	ILE
1	F	805	VAL
1	F	811	VAL
1	F	833	LEU
1	F	836	LYS
1	F	884	LYS
1	F	995	ARG
1	G	45	GLN
1	G	55	LEU
1	G	142	VAL
1	G	217	LEU
1	G	255	ASP
1	G	275	ILE
1	G	323	ILE
1	G	507	ARG
1	G	545	HIS
1	G	548	ILE
1	G	603	GLU
1	G	646	ILE
1	G	805	VAL
1	G	811	VAL
1	G	831	LEU
1	G	836	LYS
1	G	884	LYS
1	G	995	ARG
1	H	45	GLN
1	H	55	LEU
1	H	91	GLN
1	H	142	VAL
1	H	198	THR
1	H	217	LEU
1	H	255	ASP
1	H	275	ILE
1	H	306	GLU
1	H	323	ILE
1	H	507	ARG

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Mol	Chain	Res	Type
1	H	545	HIS
1	H	548	ILE
1	H	603	GLU
1	H	646	ILE
1	H	805	VAL
1	H	811	VAL
1	H	831	LEU
1	H	836	LYS
1	H	884	LYS
1	H	995	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (64) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	47	HIS
1	A	54	ASN
1	A	75	ASN
1	A	115	GLN
1	A	150	GLN
1	A	421	HIS
1	A	539	GLN
1	A	545	HIS
1	A	982	ASN
1	A	997	HIS
1	B	47	HIS
1	B	75	ASN
1	B	115	GLN
1	B	150	GLN
1	B	203	ASN
1	B	383	ASN
1	B	767	GLN
1	B	900	HIS
1	C	47	HIS
1	C	75	ASN
1	C	150	GLN
1	C	203	ASN
1	C	767	GLN
1	C	900	HIS
1	D	47	HIS
1	D	75	ASN
1	D	115	GLN
1	D	150	GLN

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Mol	Chain	Res	Type
1	D	365	GLN
1	D	645	ASN
1	D	671	ASN
1	D	767	GLN
1	D	982	ASN
1	D	997	HIS
1	E	47	HIS
1	E	75	ASN
1	E	150	GLN
1	E	545	HIS
1	E	645	ASN
1	E	671	ASN
1	E	767	GLN
1	F	47	HIS
1	F	75	ASN
1	F	115	GLN
1	F	150	GLN
1	F	545	HIS
1	F	767	GLN
1	F	900	HIS
1	G	47	HIS
1	G	75	ASN
1	G	115	GLN
1	G	203	ASN
1	G	545	HIS
1	G	638	ASN
1	G	767	GLN
1	G	900	HIS
1	G	997	HIS
1	H	47	HIS
1	H	75	ASN
1	H	115	GLN
1	H	150	GLN
1	H	203	ASN
1	H	767	GLN
1	H	982	ASN

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 oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 48 ligands modelled in this entry, 16 are monoatomic - leaving 32 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
4	FLC	A	1203	2	12,12,12	1.05	0	17,17,17	1.47	2 (11%)
5	COA	A	1204	-	41,50,50	0.65	0	52,75,75	0.88	3 (5%)
5	COA	G	1204	-	41,50,50	0.64	0	52,75,75	0.90	3 (5%)
5	COA	A	1207	-	41,50,50	0.63	0	52,75,75	0.92	3 (5%)
5	COA	D	1204	-	41,50,50	0.57	0	52,75,75	0.94	3 (5%)
6	ADP	A	1205	2	24,29,29	0.57	0	29,45,45	0.71	1 (3%)
6	ADP	F	1205	2	24,29,29	0.60	0	29,45,45	0.70	1 (3%)
3	PO4	A	1202	2	4,4,4	0.89	0	6,6,6	0.72	0
3	PO4	D	1202	2	4,4,4	0.62	0	6,6,6	0.97	0
6	ADP	D	1205	2	24,29,29	0.67	0	29,45,45	0.77	1 (3%)
6	ADP	B	1204	2	24,29,29	0.69	0	29,45,45	0.73	1 (3%)
4	FLC	B	1203	2	12,12,12	1.10	0	17,17,17	1.41	3 (17%)
6	ADP	E	1205	2	24,29,29	0.65	0	29,45,45	0.86	1 (3%)
5	COA	E	1204	-	41,50,50	0.65	0	52,75,75	1.00	4 (7%)
5	COA	C	1204	-	41,50,50	0.57	0	52,75,75	0.92	3 (5%)
4	FLC	F	1203	2	12,12,12	1.11	0	17,17,17	1.22	2 (11%)
3	PO4	H	1202	2	4,4,4	0.78	0	6,6,6	1.18	1 (16%)
3	PO4	E	1202	2	4,4,4	0.98	0	6,6,6	1.32	1 (16%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
6	ADP	C	1205	2	24,29,29	0.63	0	29,45,45	0.73	1 (3%)
6	ADP	G	1205	2	24,29,29	0.65	0	29,45,45	0.77	2 (6%)
4	FLC	C	1203	2	12,12,12	1.08	0	17,17,17	1.41	2 (11%)
3	PO4	B	1202	2	4,4,4	0.78	0	6,6,6	1.32	1 (16%)
3	PO4	G	1202	2	4,4,4	1.07	0	6,6,6	1.35	1 (16%)
3	PO4	C	1202	2	4,4,4	0.96	0	6,6,6	0.96	0
3	PO4	F	1202	2	4,4,4	1.01	0	6,6,6	1.51	1 (16%)
4	FLC	D	1203	2	12,12,12	1.09	0	17,17,17	1.28	2 (11%)
5	COA	F	1204	-	41,50,50	0.71	2 (4%)	52,75,75	1.01	5 (9%)
4	FLC	H	1203	2	12,12,12	1.11	0	17,17,17	1.26	2 (11%)
5	COA	H	1204	-	41,50,50	0.70	1 (2%)	52,75,75	0.86	3 (5%)
4	FLC	E	1203	2	12,12,12	1.08	0	17,17,17	1.53	2 (11%)
4	FLC	G	1203	2	12,12,12	1.10	0	17,17,17	1.49	2 (11%)
6	ADP	H	1205	2	24,29,29	0.62	0	29,45,45	0.87	2 (6%)

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
4	FLC	A	1203	2	-	2/16/16/16	-
5	COA	A	1204	-	-	6/44/64/64	0/3/3/3
5	COA	G	1204	-	-	6/44/64/64	0/3/3/3
5	COA	A	1207	-	-	7/44/64/64	0/3/3/3
5	COA	D	1204	-	-	6/44/64/64	0/3/3/3
6	ADP	A	1205	2	-	3/12/32/32	0/3/3/3
6	ADP	F	1205	2	-	1/12/32/32	0/3/3/3
6	ADP	D	1205	2	-	2/12/32/32	0/3/3/3
6	ADP	B	1204	2	-	3/12/32/32	0/3/3/3
4	FLC	B	1203	2	-	2/16/16/16	-
6	ADP	E	1205	2	-	2/12/32/32	0/3/3/3
5	COA	E	1204	-	-	8/44/64/64	0/3/3/3
5	COA	C	1204	-	-	7/44/64/64	0/3/3/3
4	FLC	F	1203	2	-	2/16/16/16	-
6	ADP	C	1205	2	-	2/12/32/32	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	ADP	G	1205	2	-	2/12/32/32	0/3/3/3
4	FLC	C	1203	2	-	3/16/16/16	-
4	FLC	D	1203	2	-	1/16/16/16	-
5	COA	F	1204	-	-	7/44/64/64	0/3/3/3
4	FLC	H	1203	2	-	4/16/16/16	-
5	COA	H	1204	-	-	9/44/64/64	0/3/3/3
4	FLC	E	1203	2	-	5/16/16/16	-
4	FLC	G	1203	2	-	3/16/16/16	-
6	ADP	H	1205	2	-	7/12/32/32	0/3/3/3

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	F	1204	COA	P3B-O7A	-2.46	1.42	1.50
5	H	1204	COA	P3B-O7A	-2.42	1.42	1.50
5	F	1204	COA	P2A-O6A	2.01	1.67	1.59

All (59) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	A	1203	FLC	OB1-CBC-CB	-4.07	116.49	122.25
4	G	1203	FLC	OB1-CBC-CB	-4.03	116.55	122.25
4	E	1203	FLC	OB1-CBC-CB	-3.93	116.69	122.25
5	D	1204	COA	CDP-CBP-CCP	3.92	114.63	108.23
5	E	1204	COA	CDP-CBP-CCP	3.83	114.48	108.23
4	C	1203	FLC	OB1-CBC-CB	-3.81	116.86	122.25
5	A	1207	COA	CDP-CBP-CCP	3.51	113.96	108.23
5	F	1204	COA	CDP-CBP-CCP	3.32	113.66	108.23
4	D	1203	FLC	OB1-CBC-CB	-2.92	118.12	122.25
4	G	1203	FLC	OB2-CBC-CB	2.91	118.11	113.05
4	B	1203	FLC	OB1-CBC-CB	-2.90	118.14	122.25
4	C	1203	FLC	OB2-CBC-CB	2.88	118.05	113.05
5	H	1204	COA	CDP-CBP-CCP	2.87	112.92	108.23
3	F	1202	PO4	O3-P-O2	2.79	116.94	107.97
5	C	1204	COA	CDP-CBP-CCP	2.78	112.77	108.23
4	H	1203	FLC	OB1-CBC-CB	-2.78	118.32	122.25
4	E	1203	FLC	OB2-CBC-CB	2.75	117.83	113.05
4	F	1203	FLC	OB1-CBC-CB	-2.67	118.47	122.25
5	A	1204	COA	O6A-P2A-O4A	2.64	119.39	109.07
3	B	1202	PO4	O3-P-O2	2.64	116.44	107.97

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	B	1203	FLC	CB-CA-CAC	2.56	120.01	113.81
5	F	1204	COA	O9A-P3B-O8A	2.54	117.34	107.64
5	E	1204	COA	O5B-P1A-O1A	2.53	118.94	109.07
6	E	1205	ADP	C5-C6-N6	2.49	124.14	120.35
4	A	1203	FLC	OB2-CBC-CB	2.46	117.33	113.05
5	G	1204	COA	CDP-CBP-CCP	2.46	112.24	108.23
5	C	1204	COA	O6A-P2A-O4A	2.43	118.56	109.07
4	B	1203	FLC	OB2-CBC-CB	2.39	117.19	113.05
5	A	1207	COA	C5A-C6A-N6A	2.34	123.92	120.35
6	D	1205	ADP	C5-C6-N6	2.33	123.90	120.35
5	A	1204	COA	CDP-CBP-CCP	2.32	112.01	108.23
5	A	1207	COA	O6A-P2A-O4A	2.32	118.12	109.07
5	G	1204	COA	O6A-P2A-O4A	2.31	118.09	109.07
5	E	1204	COA	O6A-P2A-O4A	2.30	118.05	109.07
5	D	1204	COA	O6A-P2A-O4A	2.30	118.04	109.07
5	G	1204	COA	C5A-C6A-N6A	2.29	123.83	120.35
6	H	1205	ADP	C5-C6-N6	2.29	123.83	120.35
6	G	1205	ADP	C5-C6-N6	2.27	123.80	120.35
6	B	1204	ADP	C5-C6-N6	2.26	123.79	120.35
5	F	1204	COA	O5B-P1A-O1A	2.25	117.86	109.07
5	H	1204	COA	O6A-P2A-O4A	2.24	117.84	109.07
3	G	1202	PO4	O4-P-O3	-2.20	100.90	107.97
5	F	1204	COA	C5A-C6A-N6A	2.20	123.69	120.35
4	F	1203	FLC	OB2-CBC-CB	2.20	116.87	113.05
5	C	1204	COA	C5A-C6A-N6A	2.18	123.66	120.35
6	C	1205	ADP	C5-C6-N6	2.17	123.64	120.35
5	F	1204	COA	O6A-P2A-O4A	2.16	117.52	109.07
3	H	1202	PO4	O3-P-O1	-2.16	103.00	110.89
5	D	1204	COA	C5A-C6A-N6A	2.13	123.60	120.35
6	A	1205	ADP	C5-C6-N6	2.13	123.59	120.35
6	F	1205	ADP	C5-C6-N6	2.13	123.59	120.35
5	H	1204	COA	C5A-C6A-N6A	2.13	123.59	120.35
3	E	1202	PO4	O3-P-O2	2.11	114.75	107.97
4	H	1203	FLC	OB2-CBC-CB	2.11	116.71	113.05
4	D	1203	FLC	OB2-CBC-CB	2.07	116.64	113.05
5	A	1204	COA	C5A-C6A-N6A	2.06	123.48	120.35
6	G	1205	ADP	C3'-C2'-C1'	2.04	104.05	100.98
5	E	1204	COA	C5A-C6A-N6A	2.04	123.45	120.35
6	H	1205	ADP	O3B-PB-O3A	2.01	111.37	104.64

There are no chirality outliers.

All (100) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	G	1203	FLC	CA-CB-CG-CGC
4	G	1203	FLC	CBC-CB-CG-CGC
5	A	1204	COA	C5B-O5B-P1A-O3A
5	A	1204	COA	CCP-O6A-P2A-O4A
5	A	1204	COA	CCP-O6A-P2A-O5A
5	A	1207	COA	C5B-O5B-P1A-O3A
5	A	1207	COA	CCP-O6A-P2A-O4A
5	A	1207	COA	CCP-O6A-P2A-O5A
5	C	1204	COA	CCP-O6A-P2A-O4A
5	C	1204	COA	CCP-O6A-P2A-O5A
5	D	1204	COA	C5B-O5B-P1A-O3A
5	D	1204	COA	CCP-O6A-P2A-O4A
5	D	1204	COA	CCP-O6A-P2A-O5A
5	E	1204	COA	C5B-O5B-P1A-O3A
5	E	1204	COA	CCP-O6A-P2A-O4A
5	E	1204	COA	CCP-O6A-P2A-O5A
5	E	1204	COA	C9P-CAP-CBP-CCP
5	F	1204	COA	C5B-O5B-P1A-O3A
5	F	1204	COA	CCP-O6A-P2A-O4A
5	F	1204	COA	CCP-O6A-P2A-O5A
5	G	1204	COA	C5B-O5B-P1A-O3A
5	G	1204	COA	CCP-O6A-P2A-O4A
5	G	1204	COA	CCP-O6A-P2A-O5A
5	H	1204	COA	C5B-O5B-P1A-O3A
5	H	1204	COA	CCP-O6A-P2A-O4A
5	H	1204	COA	CCP-O6A-P2A-O5A
6	B	1204	ADP	PA-O3A-PB-O2B
6	H	1205	ADP	C5'-O5'-PA-O3A
4	E	1203	FLC	CA-CB-CG-CGC
4	E	1203	FLC	CBC-CB-CG-CGC
4	G	1203	FLC	OHB-CB-CG-CGC
4	C	1203	FLC	CBC-CB-CG-CGC
4	C	1203	FLC	CA-CB-CG-CGC
4	E	1203	FLC	OHB-CB-CG-CGC
6	C	1205	ADP	PB-O3A-PA-O1A
4	A	1203	FLC	CA-CB-CG-CGC
4	B	1203	FLC	CBC-CB-CG-CGC
6	H	1205	ADP	PA-O3A-PB-O1B
4	B	1203	FLC	CA-CB-CG-CGC
5	A	1204	COA	CCP-O6A-P2A-O3A
5	A	1207	COA	CCP-O6A-P2A-O3A
5	C	1204	COA	C3B-O3B-P3B-O9A
5	C	1204	COA	C5B-O5B-P1A-O3A

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Mol	Chain	Res	Type	Atoms
5	C	1204	COA	CCP-O6A-P2A-O3A
5	F	1204	COA	C3B-O3B-P3B-O9A
5	G	1204	COA	CCP-O6A-P2A-O3A
5	H	1204	COA	C3B-O3B-P3B-O9A
6	B	1204	ADP	PB-O3A-PA-O2A
6	F	1205	ADP	PB-O3A-PA-O2A
6	A	1205	ADP	C4'-C5'-O5'-PA
5	A	1207	COA	C5B-O5B-P1A-O1A
5	D	1204	COA	C5B-O5B-P1A-O1A
5	E	1204	COA	C5B-O5B-P1A-O1A
5	E	1204	COA	C5B-O5B-P1A-O2A
5	F	1204	COA	C5B-O5B-P1A-O1A
5	G	1204	COA	C5B-O5B-P1A-O1A
5	H	1204	COA	C5B-O5B-P1A-O1A
6	H	1205	ADP	C5'-O5'-PA-O2A
5	A	1207	COA	C9P-CAP-CBP-CCP
5	D	1204	COA	C9P-CAP-CBP-CCP
5	H	1204	COA	C9P-CAP-CBP-CCP
4	A	1203	FLC	CBC-CB-CG-CGC
4	F	1203	FLC	CBC-CB-CG-CGC
6	A	1205	ADP	PB-O3A-PA-O1A
6	A	1205	ADP	PB-O3A-PA-O2A
6	E	1205	ADP	PB-O3A-PA-O1A
6	E	1205	ADP	PB-O3A-PA-O2A
6	H	1205	ADP	PB-O3A-PA-O2A
4	F	1203	FLC	CA-CB-CG-CGC
4	H	1203	FLC	CA-CB-CG-CGC
4	H	1203	FLC	CBC-CB-CG-CGC
6	D	1205	ADP	PB-O3A-PA-O1A
4	H	1203	FLC	CB-CA-CAC-OA1
4	H	1203	FLC	CB-CA-CAC-OA2
6	H	1205	ADP	PA-O3A-PB-O2B
6	H	1205	ADP	PA-O3A-PB-O3B
4	E	1203	FLC	CB-CA-CAC-OA1
5	D	1204	COA	CCP-O6A-P2A-O3A
5	E	1204	COA	CCP-O6A-P2A-O3A
5	F	1204	COA	CCP-O6A-P2A-O3A
5	H	1204	COA	CCP-O6A-P2A-O3A
6	B	1204	ADP	PB-O3A-PA-O1A
6	G	1205	ADP	PB-O3A-PA-O1A
6	G	1205	ADP	PB-O3A-PA-O2A
4	C	1203	FLC	OHB-CB-CG-CGC

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Mol	Chain	Res	Type	Atoms
5	A	1204	COA	CBP-CCP-O6A-P2A
5	A	1207	COA	CBP-CCP-O6A-P2A
5	E	1204	COA	CBP-CCP-O6A-P2A
5	F	1204	COA	CBP-CCP-O6A-P2A
5	G	1204	COA	CBP-CCP-O6A-P2A
5	H	1204	COA	CBP-CCP-O6A-P2A
4	E	1203	FLC	CB-CA-CAC-OA2
6	D	1205	ADP	C4'-C5'-O5'-PA
5	A	1204	COA	C5B-O5B-P1A-O1A
5	C	1204	COA	C5B-O5B-P1A-O1A
5	H	1204	COA	C5B-O5B-P1A-O2A
6	H	1205	ADP	C5'-O5'-PA-O1A
6	C	1205	ADP	C4'-C5'-O5'-PA
5	C	1204	COA	C9P-CAP-CBP-CCP
4	D	1203	FLC	CBC-CB-CG-CGC

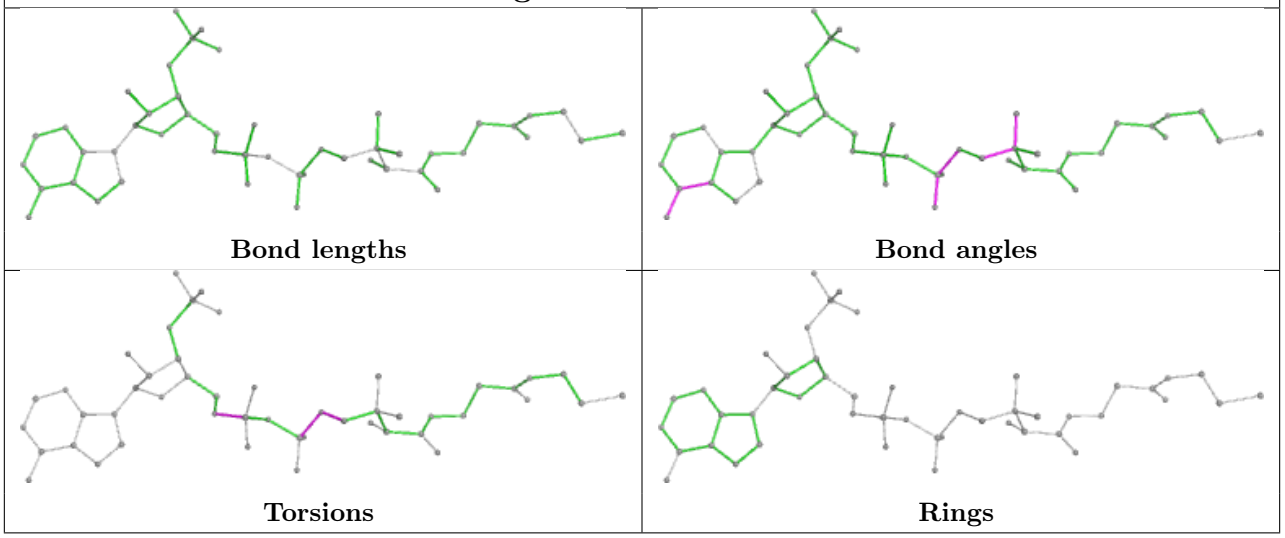
There are no ring outliers.

8 monomers are involved in 9 short contacts:

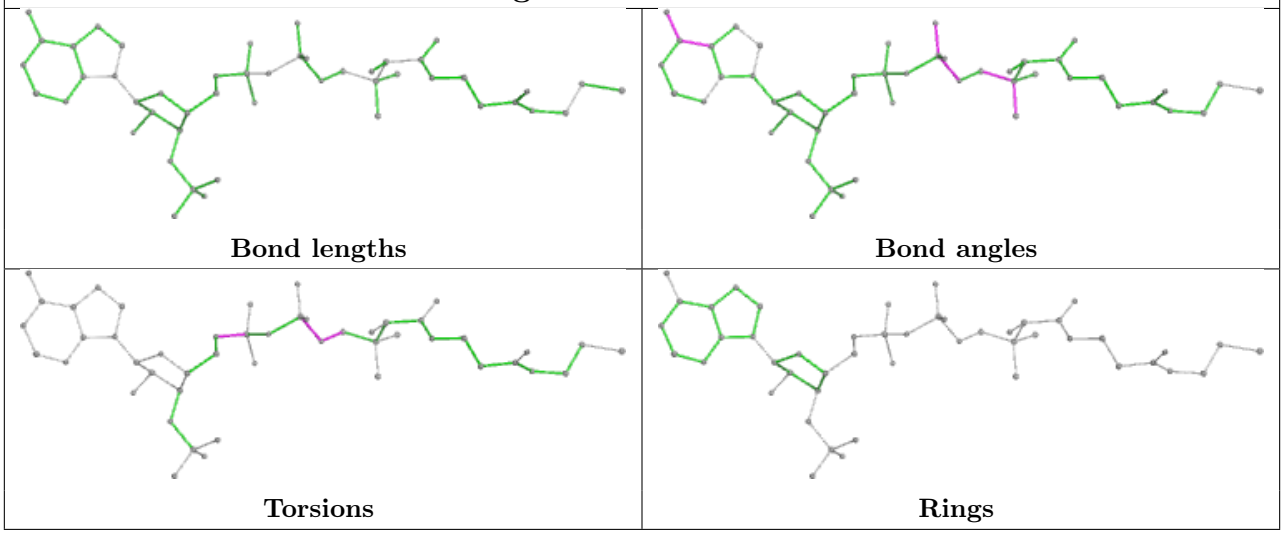
Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	A	1205	ADP	1	0
6	F	1205	ADP	1	0
4	B	1203	FLC	1	0
6	E	1205	ADP	2	0
5	C	1204	COA	1	0
4	F	1203	FLC	1	0
6	G	1205	ADP	1	0
6	H	1205	ADP	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 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 COA A 1204



Ligand COA G 1204



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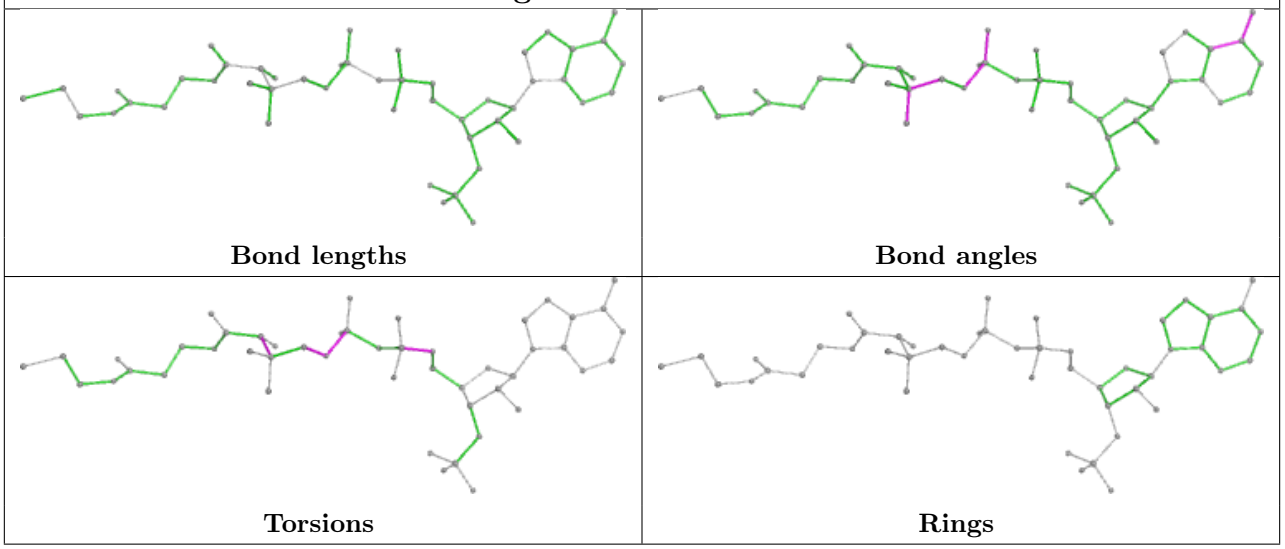
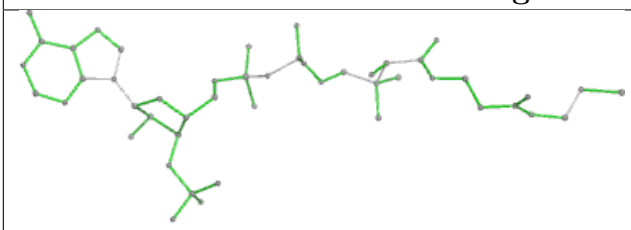
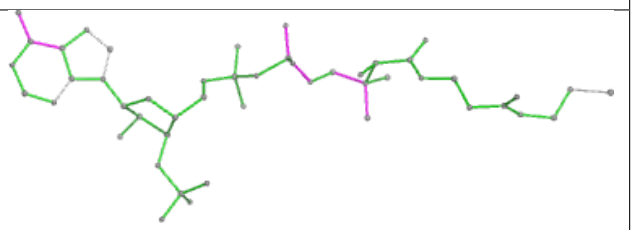


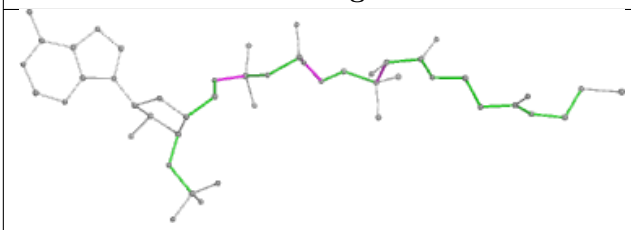
Ligand COA D 1204



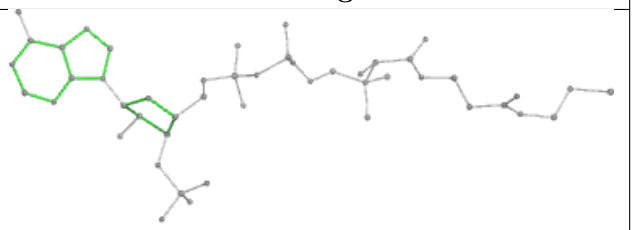
Bond lengths



Bond angles

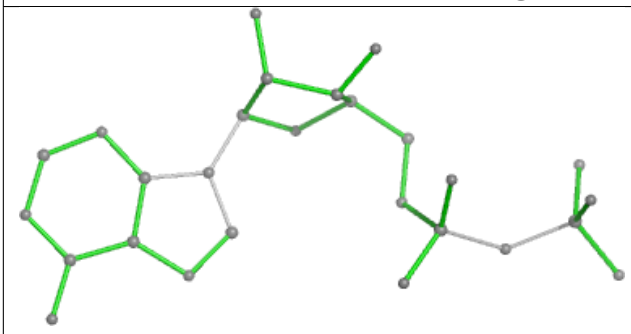


Torsions

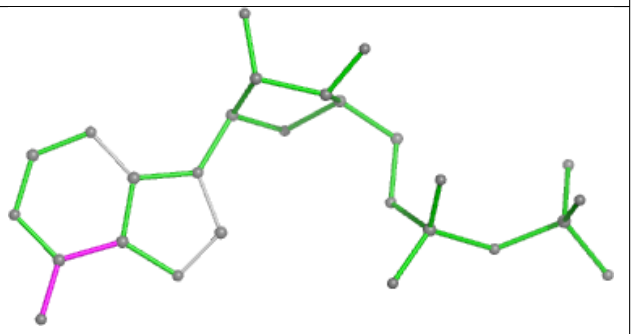


Rings

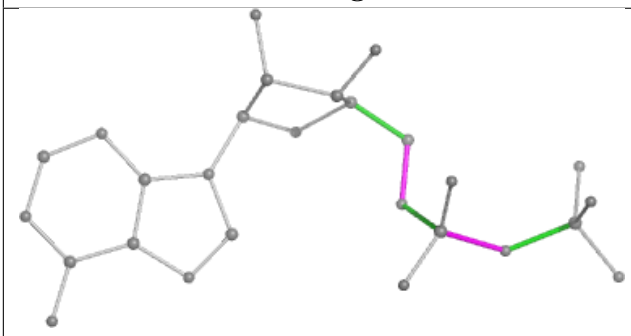
Ligand ADP A 1205



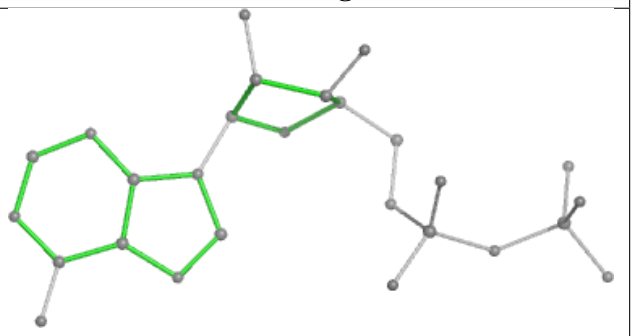
Bond lengths



Bond angles

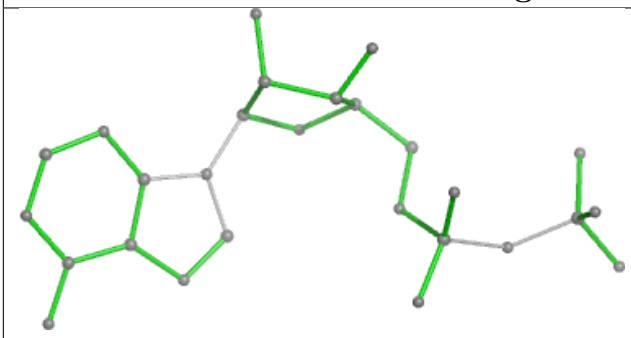


Torsions

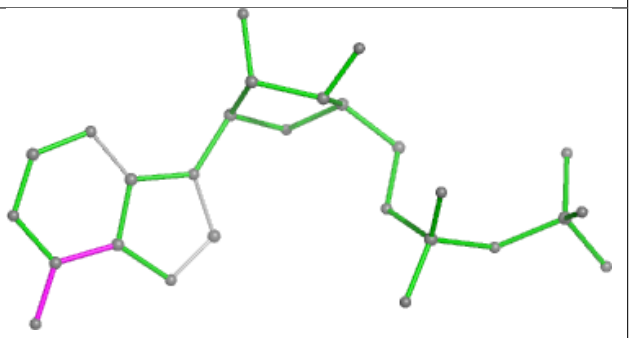


Rings

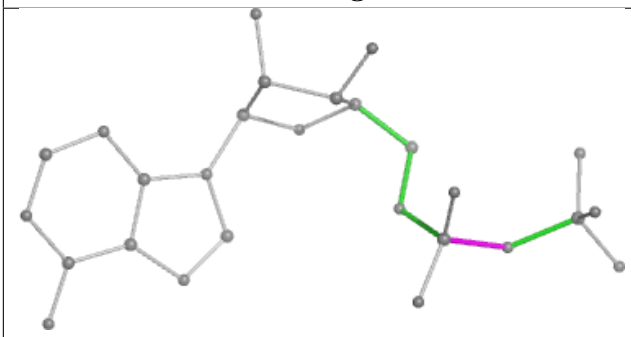
Ligand ADP F 1205



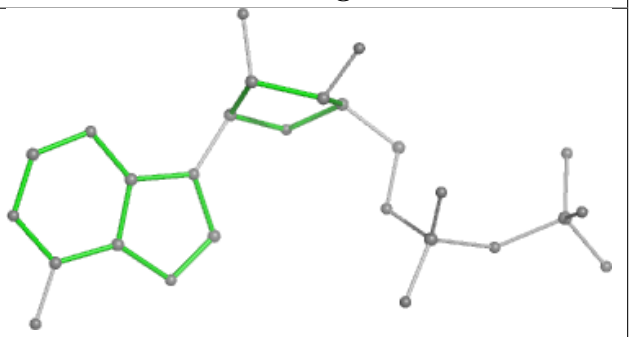
Bond lengths



Bond angles

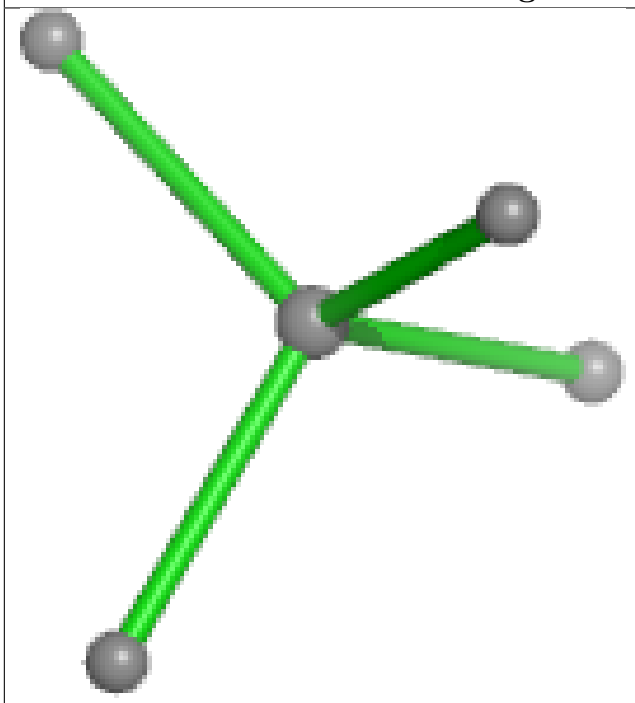


Torsions



Rings

Ligand PO4 A 1202



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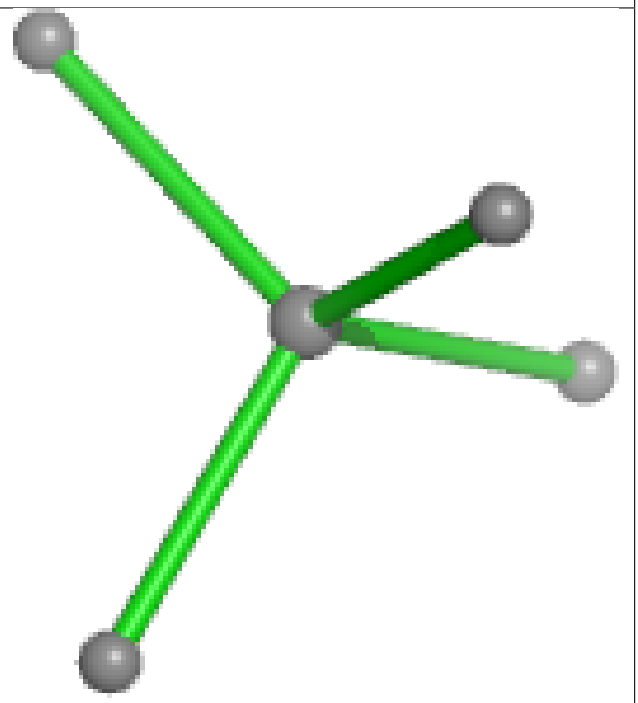
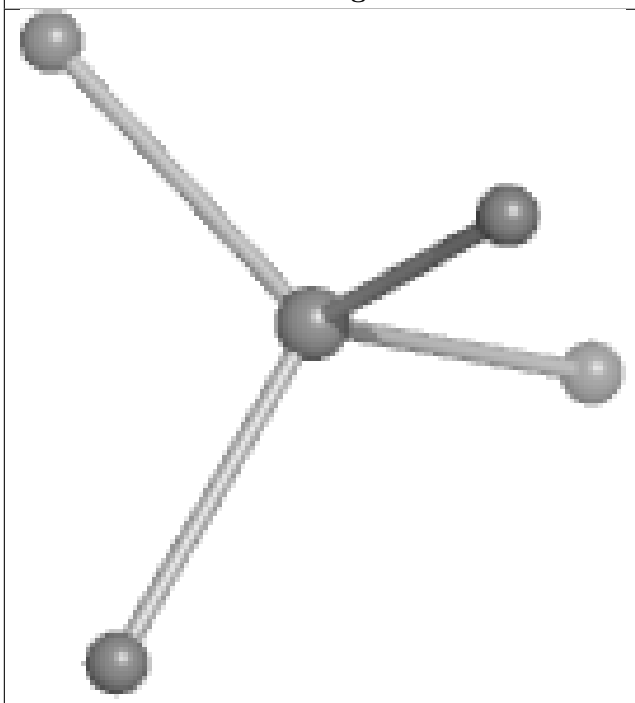


Bond angles



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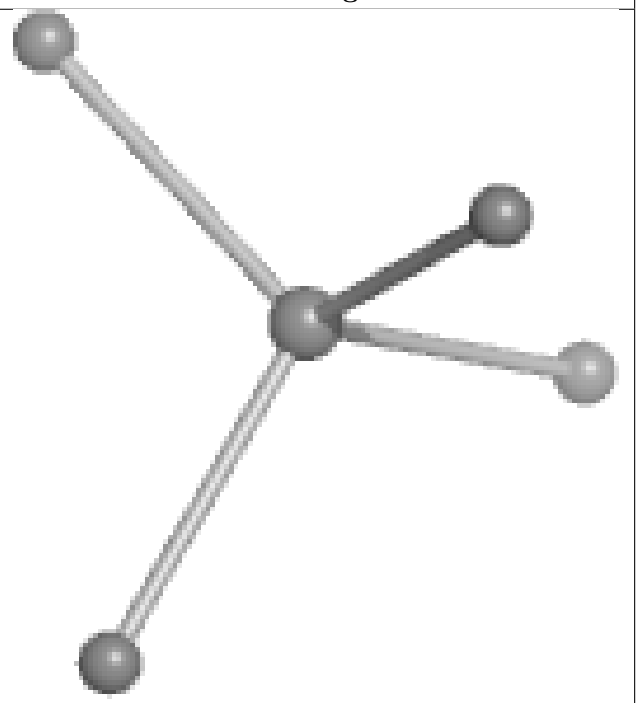
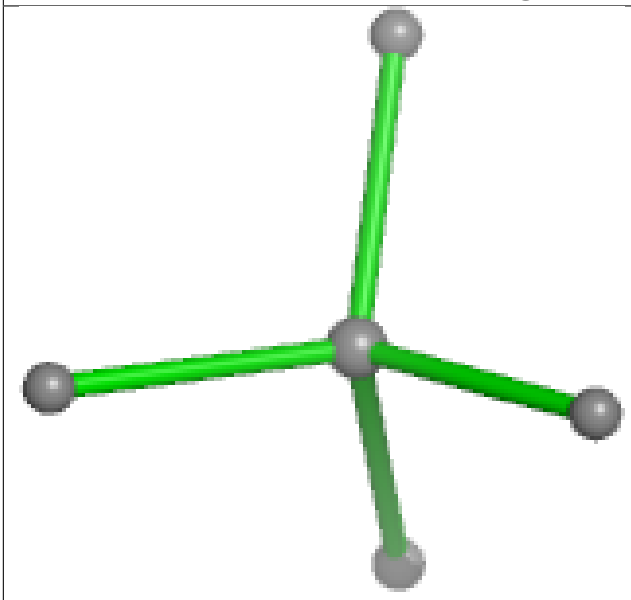


Rings

Ligand PO4 D 1202



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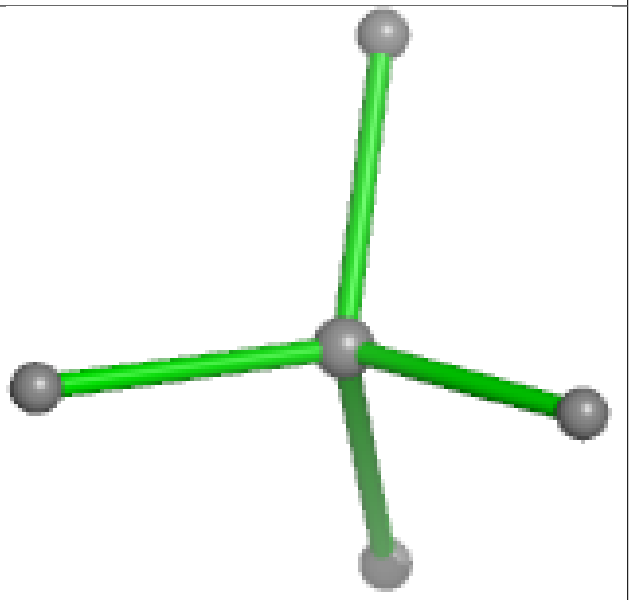
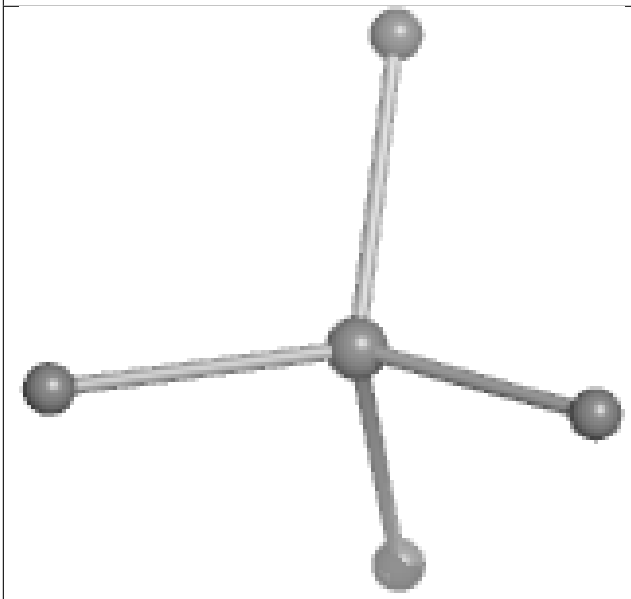
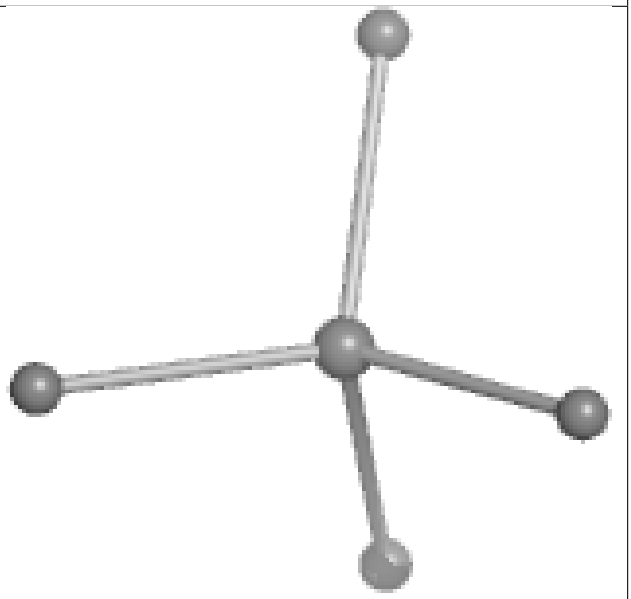


Bond angles

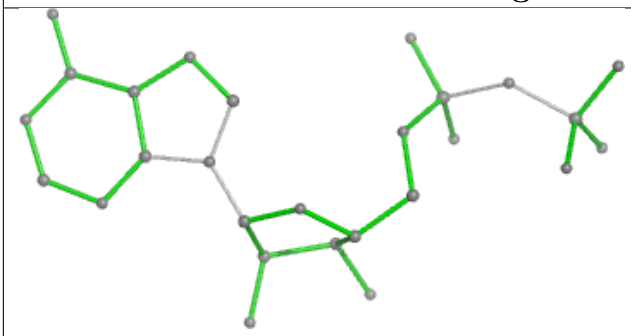


Torsions



Rings

Ligand ADP D 1205



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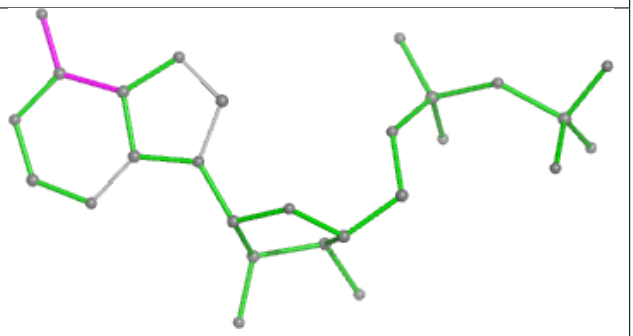
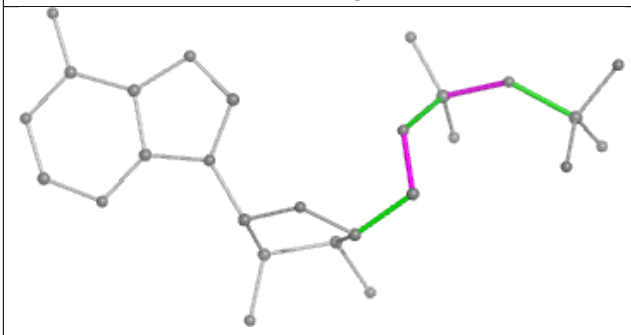
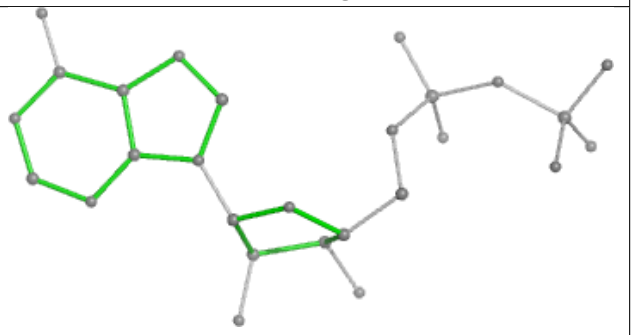


Bond angles

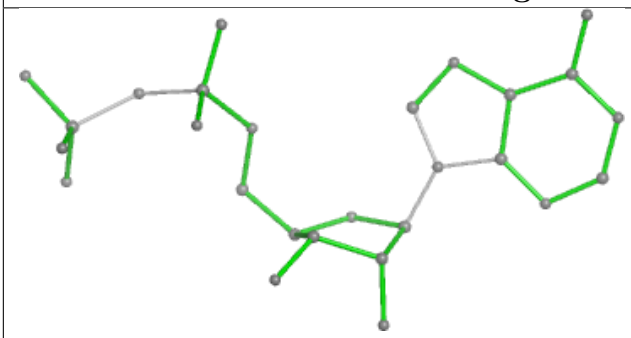


Torsions

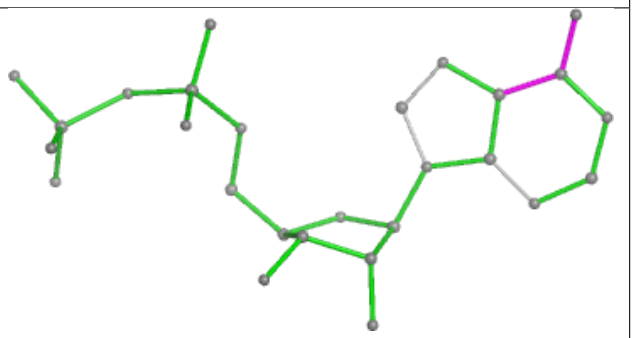


Rings

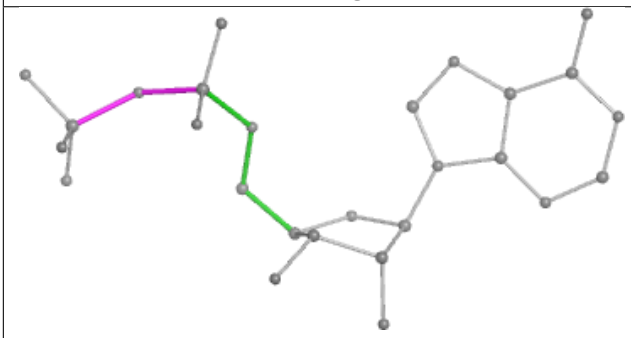
Ligand ADP B 1204



Bond lengths



Bond angles



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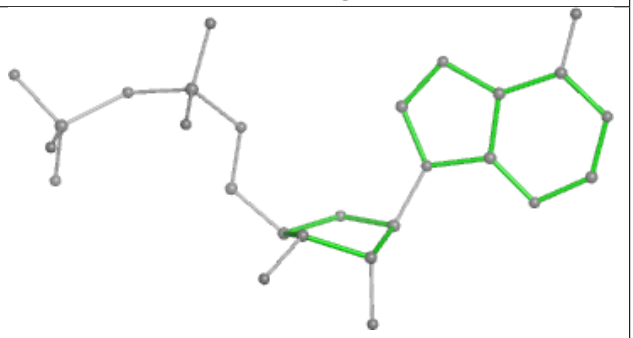
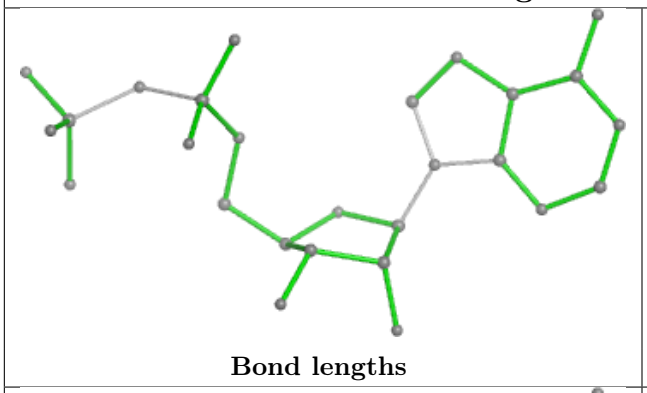


Rings

Ligand ADP E 1205



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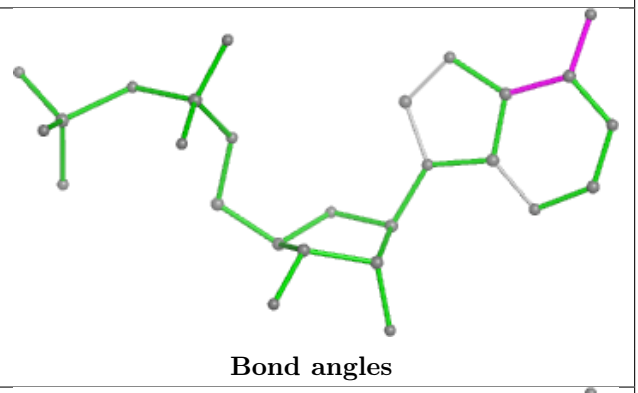
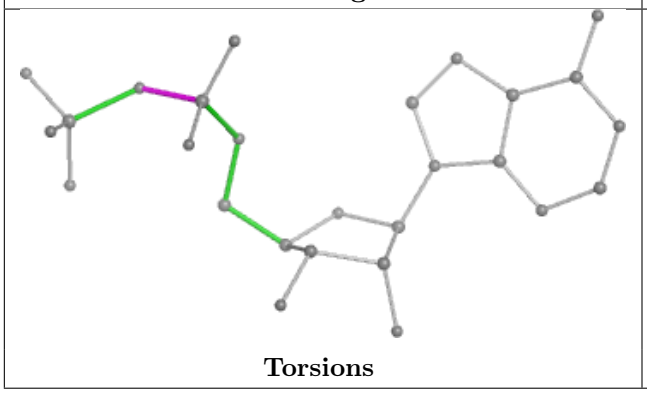


Bond angles



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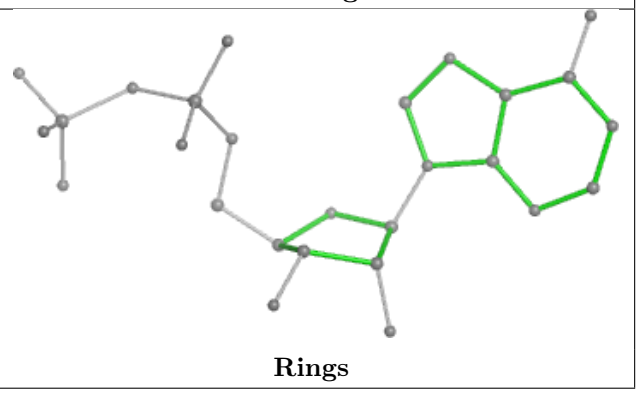
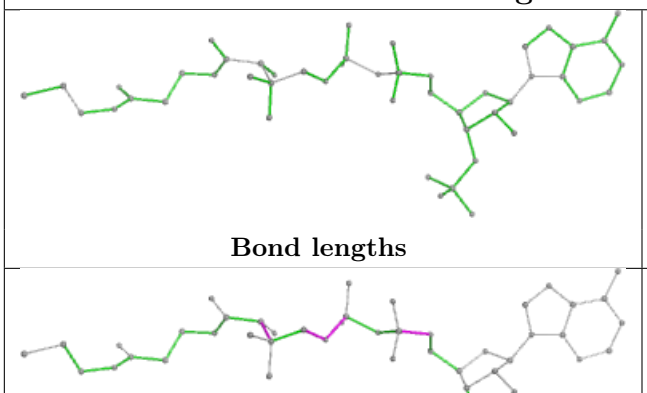


Rings

Ligand COA E 1204



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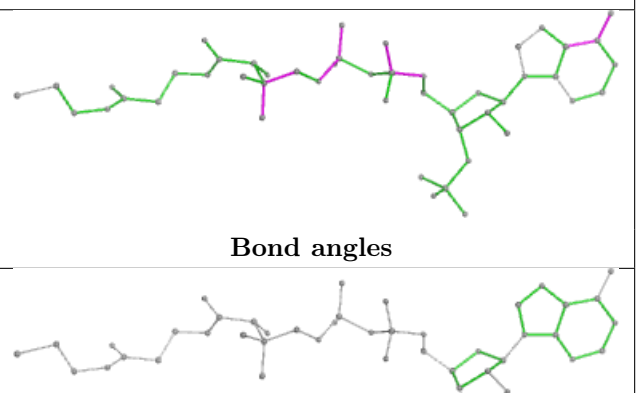
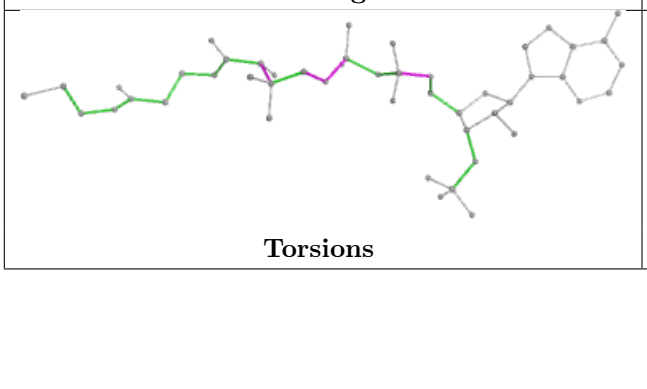


Bond angles



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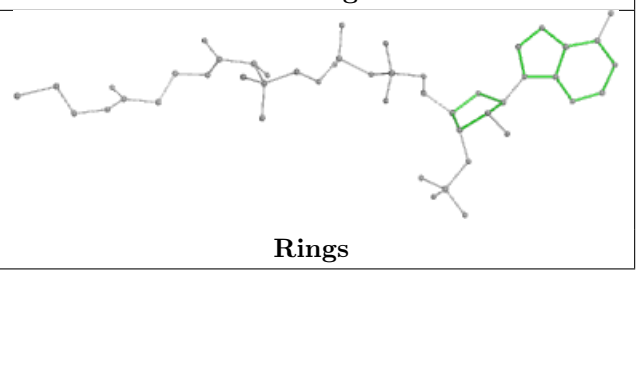
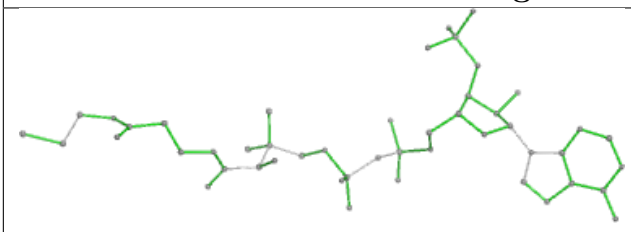


Rings

Ligand COA C 1204



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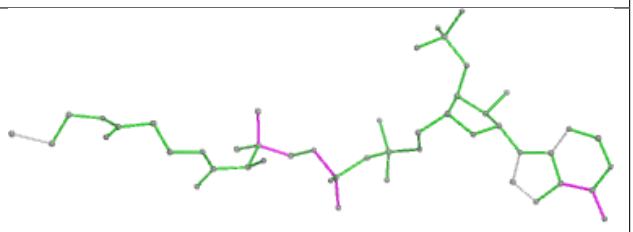
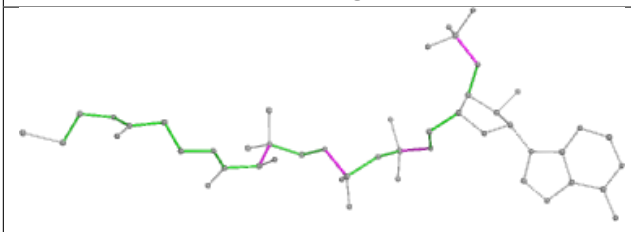


Bond angles



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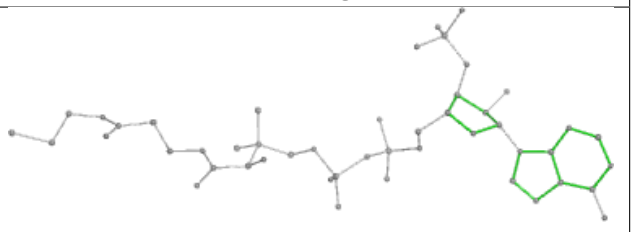
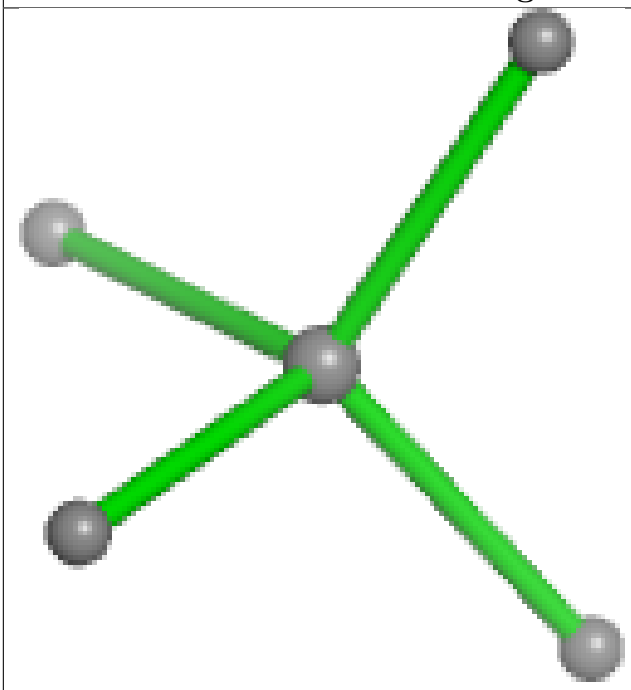


Rings

Ligand PO4 H 1202



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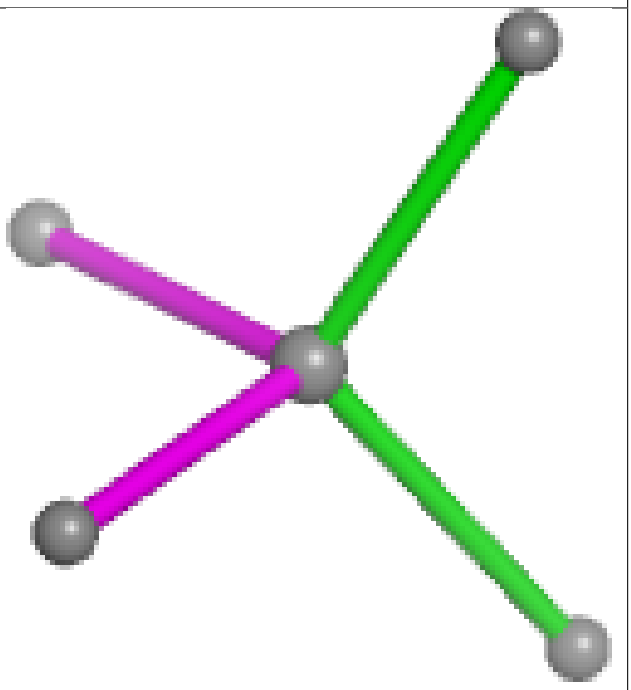
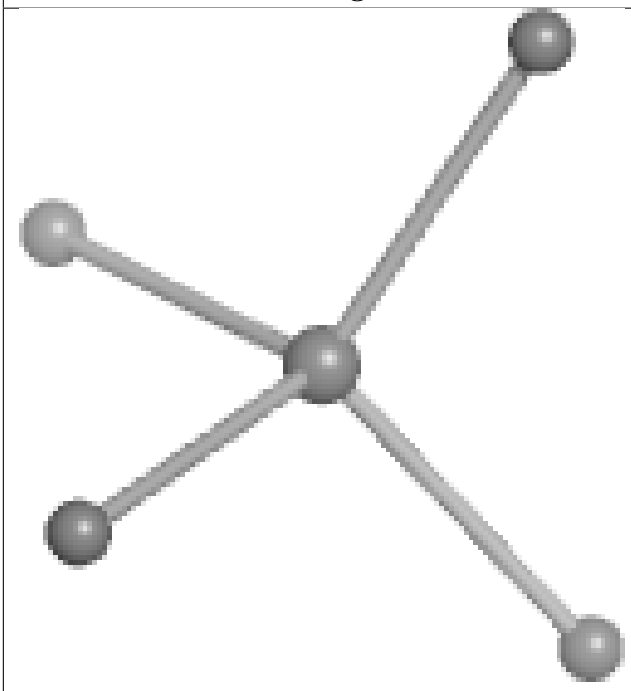
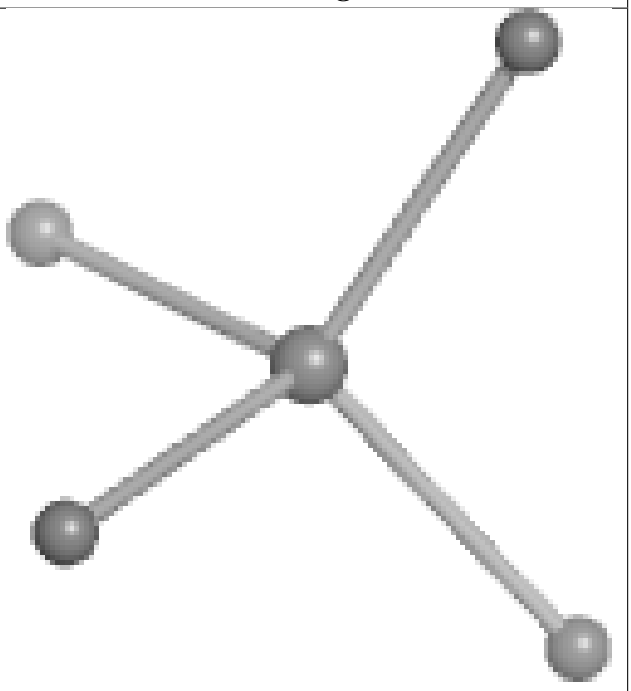


Bond angles

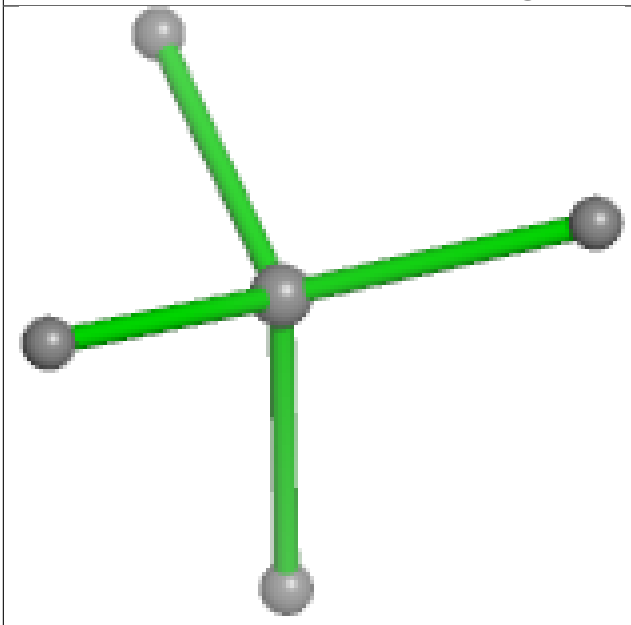


Torsions

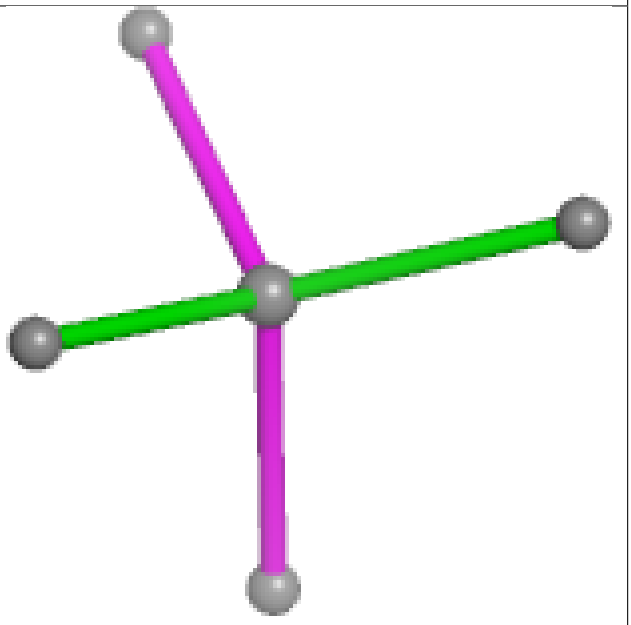


Rings

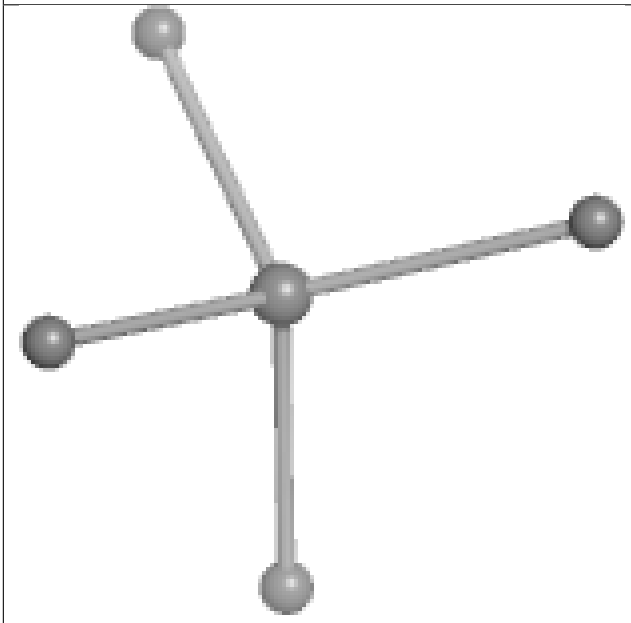
Ligand PO4 E 1202



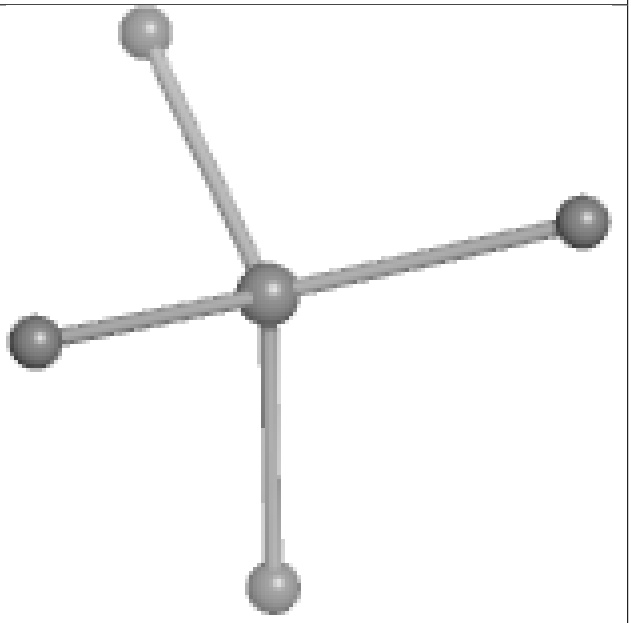
Bond lengths



Bond angles

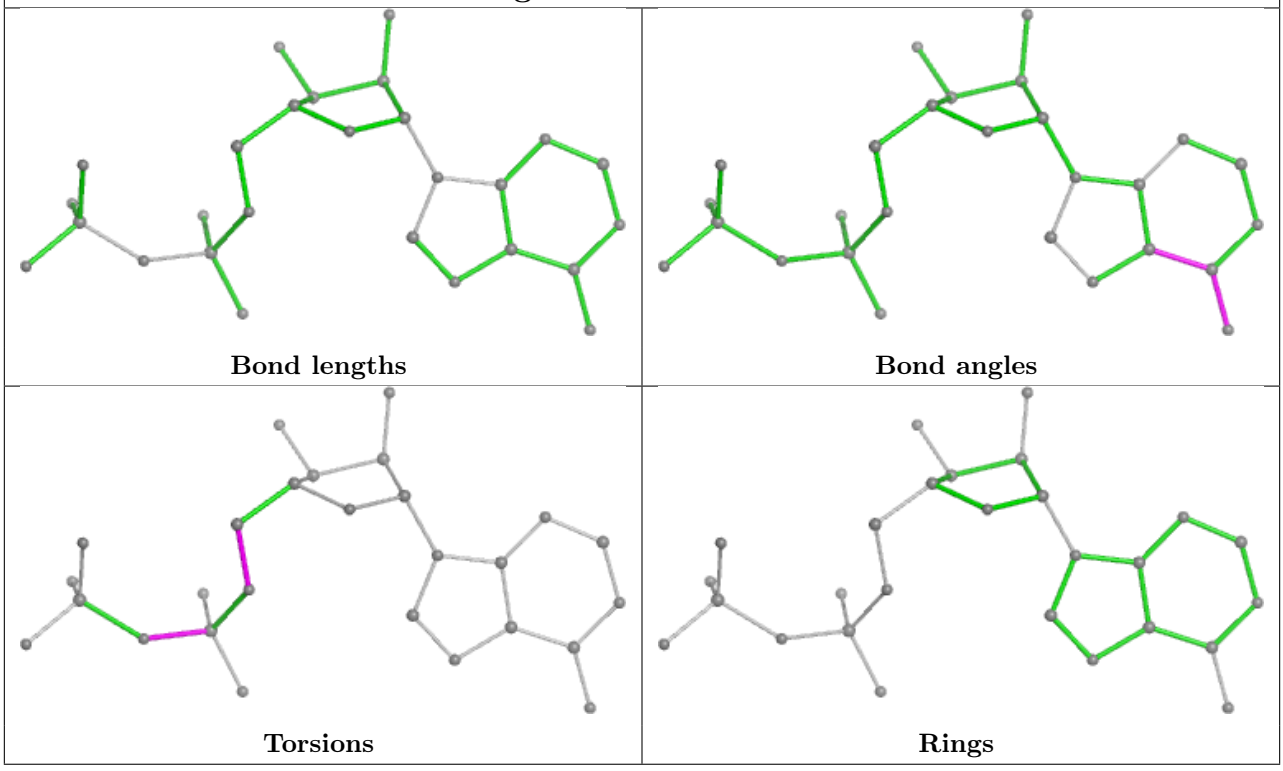


Torsions

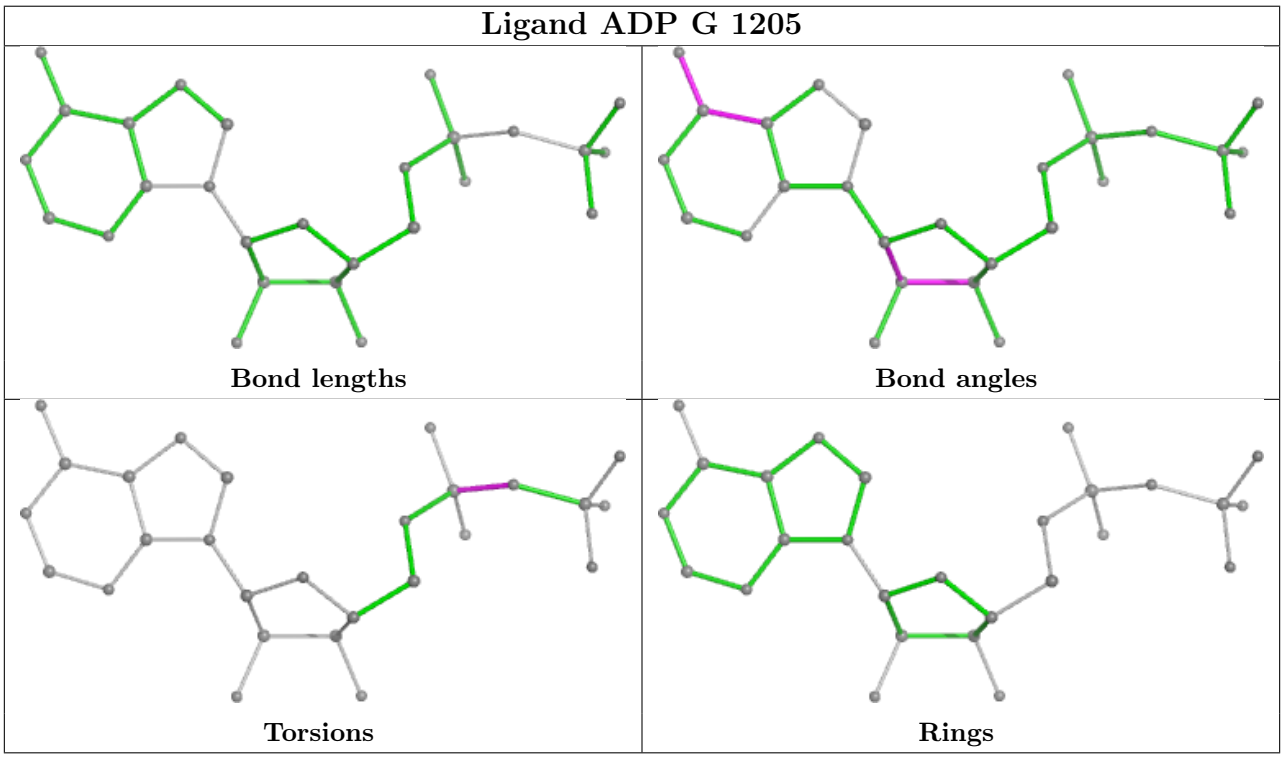


Rings

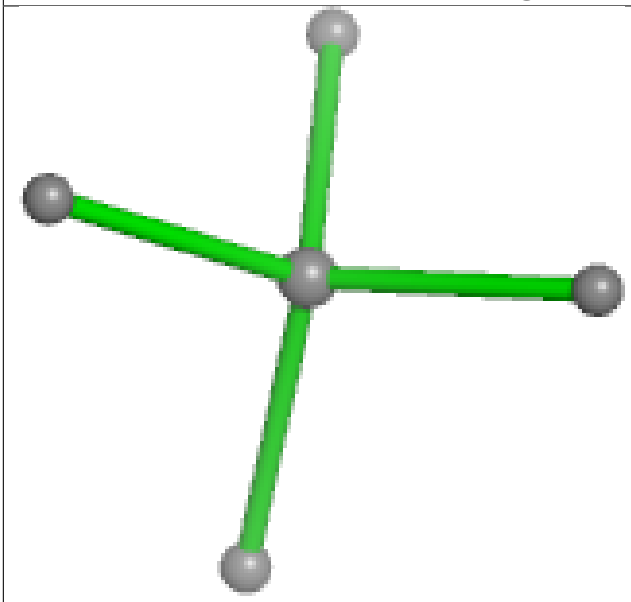
Ligand ADP C 1205



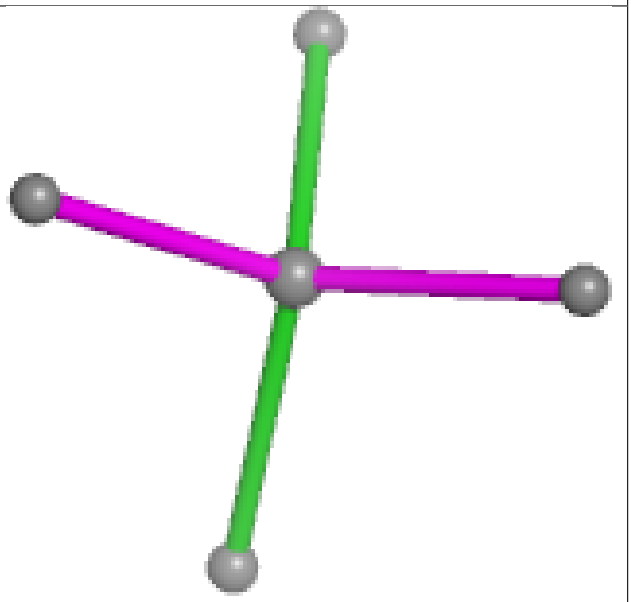
Ligand ADP G 1205



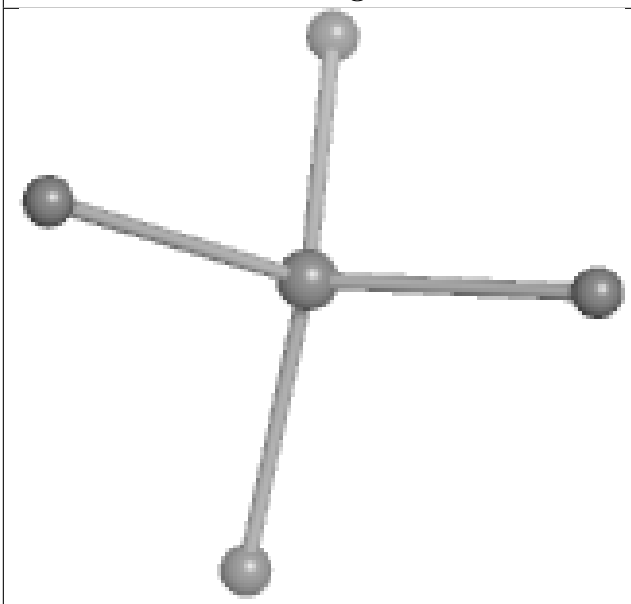
Ligand PO4 B 1202



Bond lengths



Bond angles



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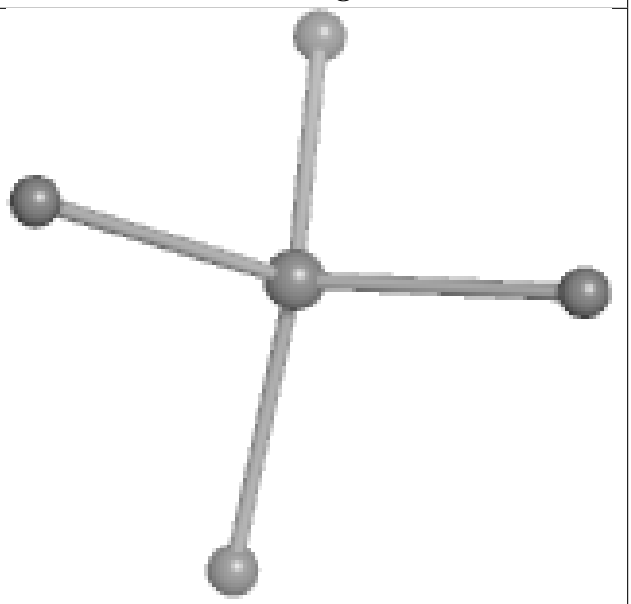
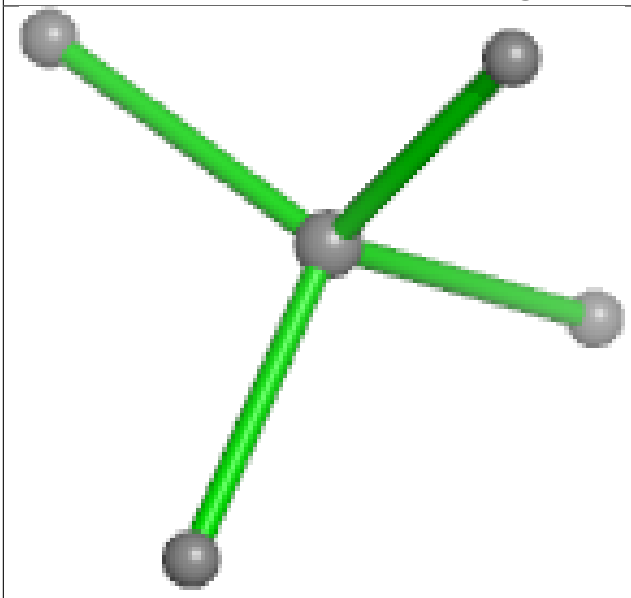
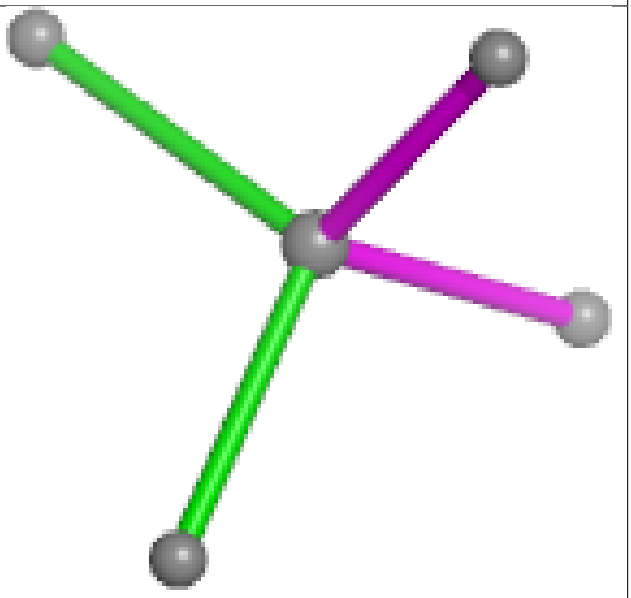


Rings

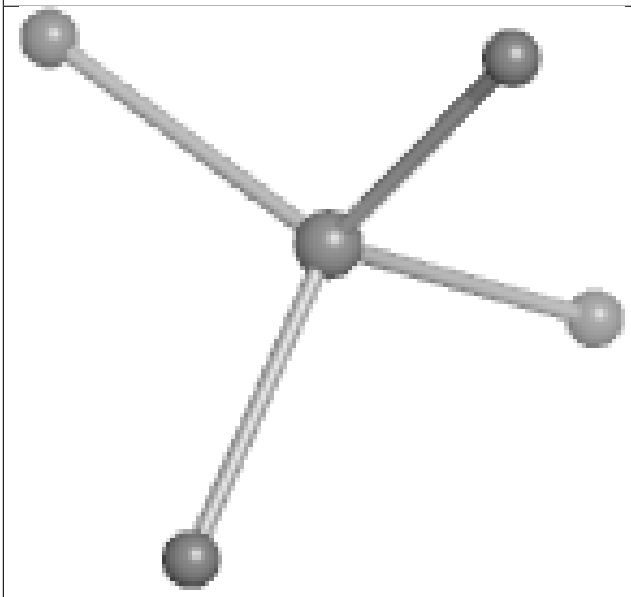
Ligand PO4 G 1202



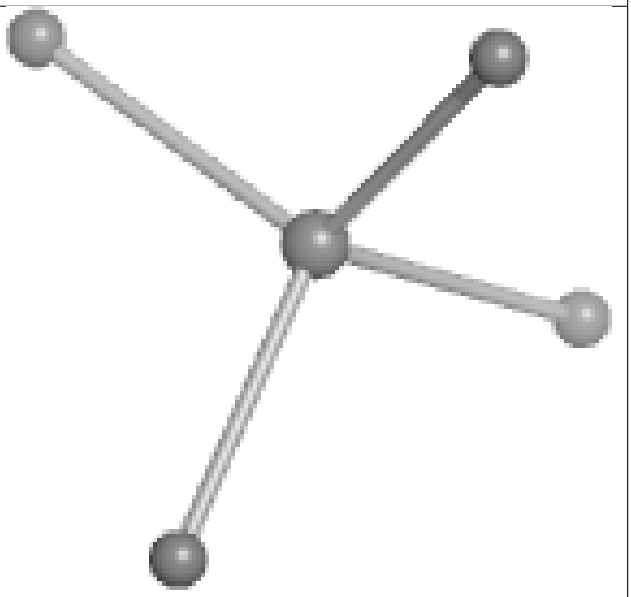
Bond lengths



Bond angles

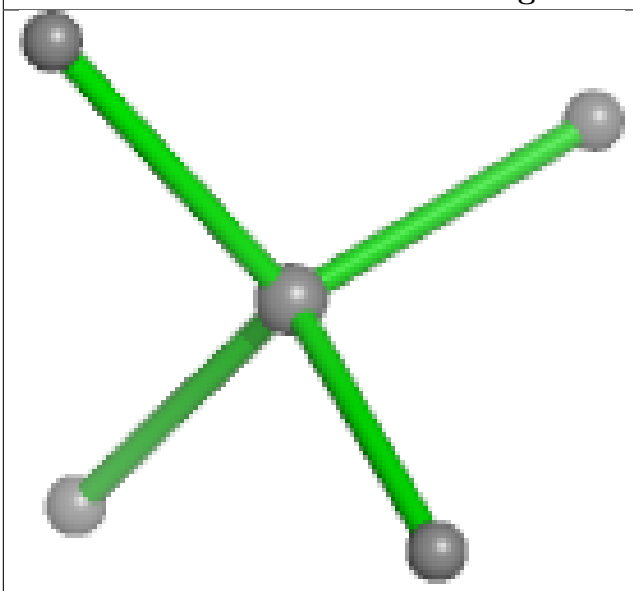


Torsions

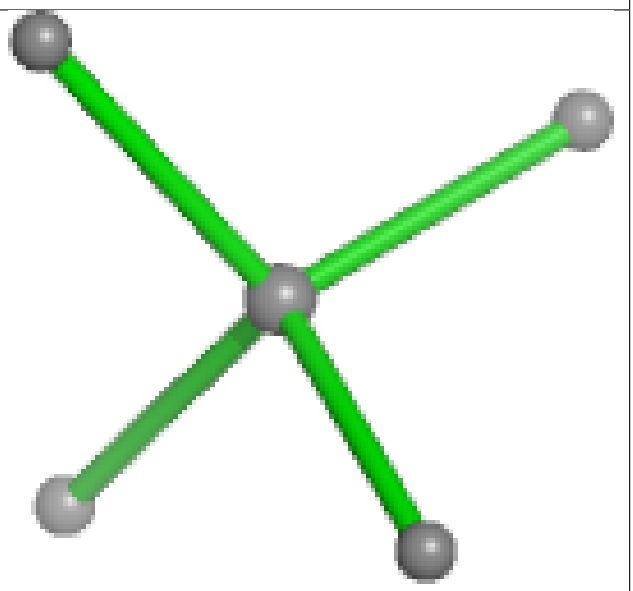


Rings

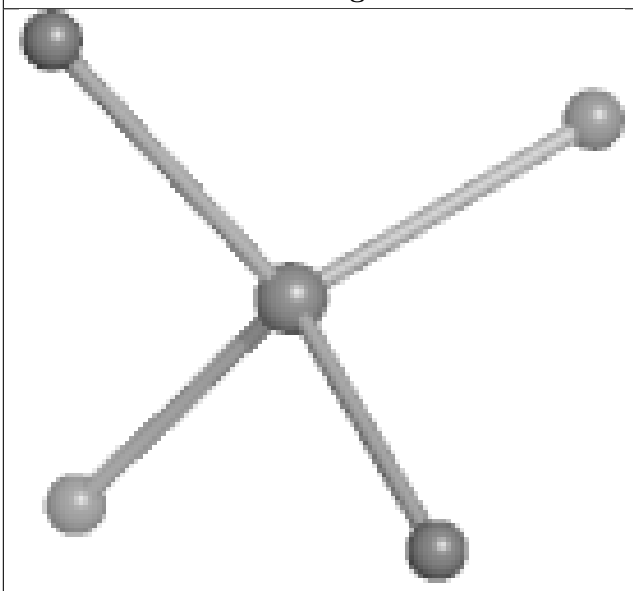
Ligand PO4 C 1202



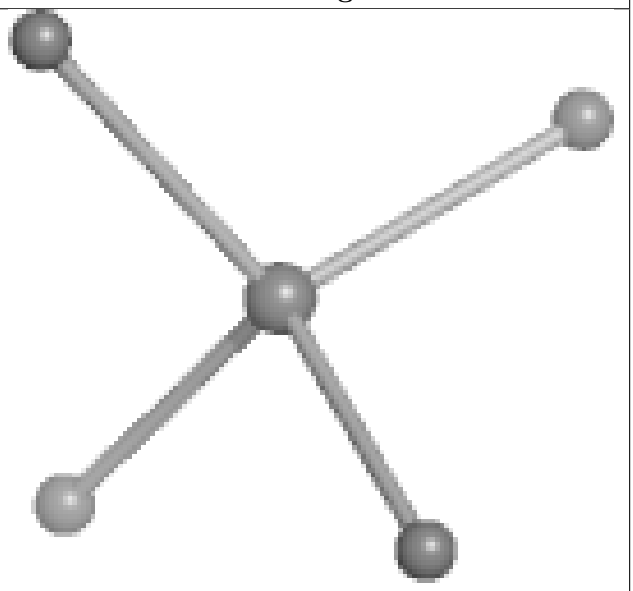
Bond lengths



Bond angles

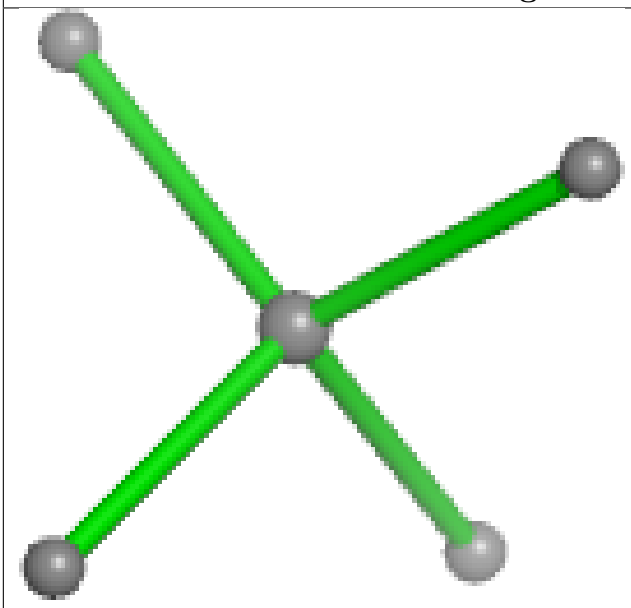


Torsions

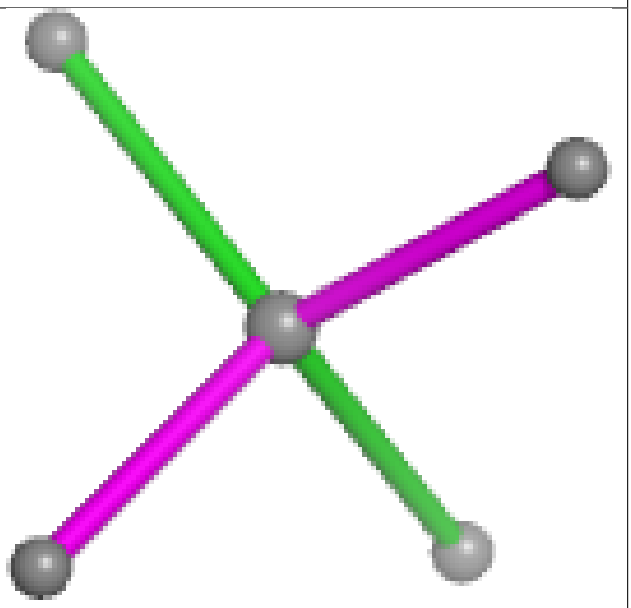


Rings

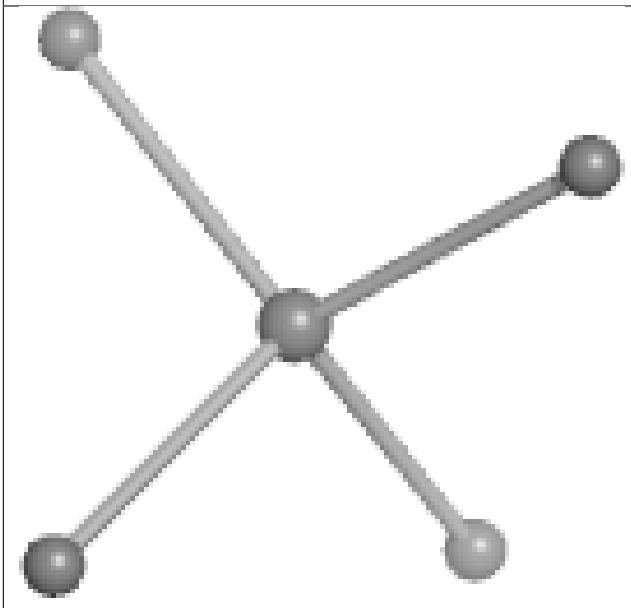
Ligand PO4 F 1202



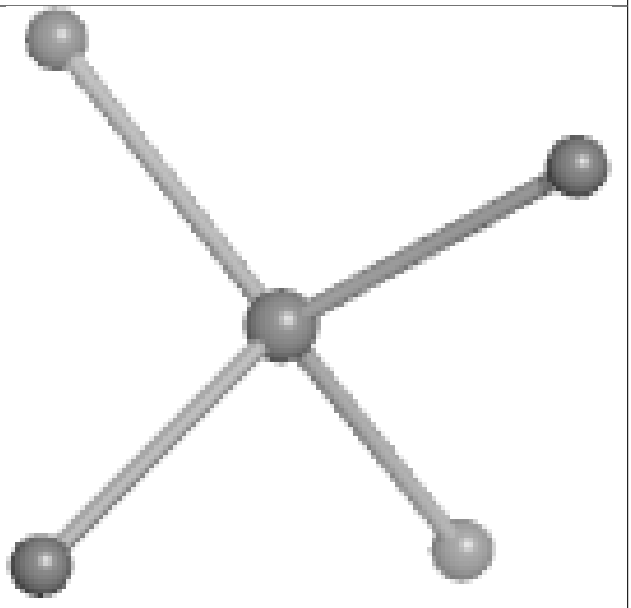
Bond lengths



Bond angles

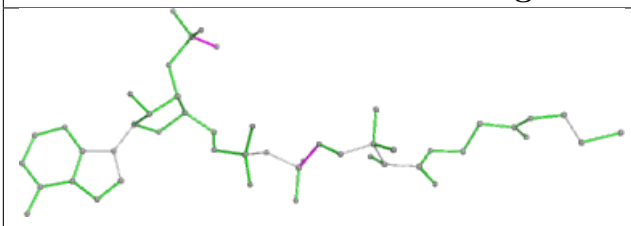


Torsions

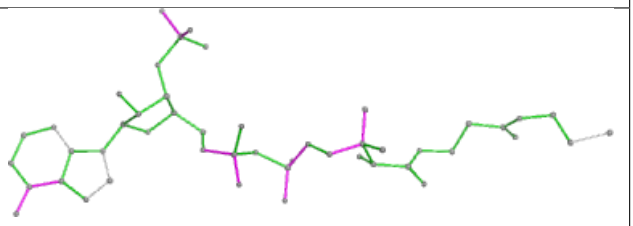


Rings

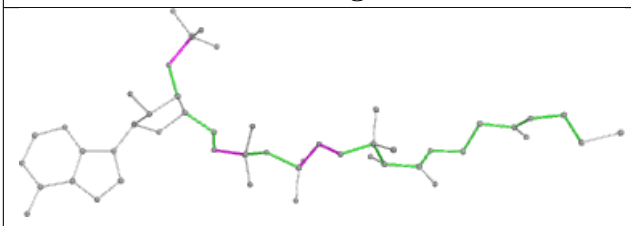
Ligand COA F 1204



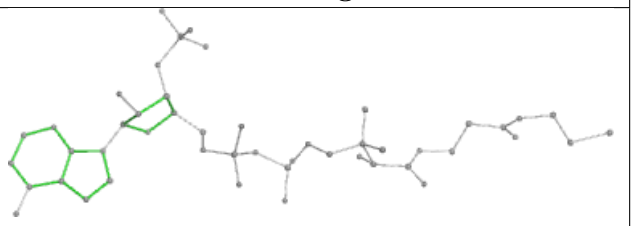
Bond lengths



Bond angles

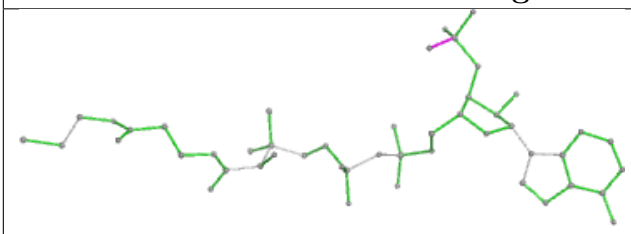


Torsions

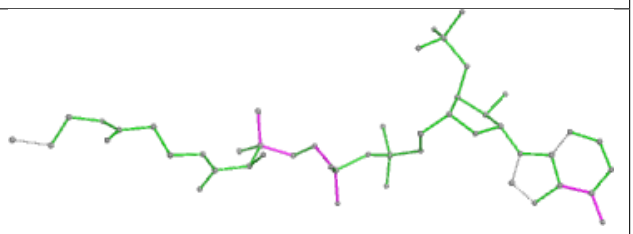


Rings

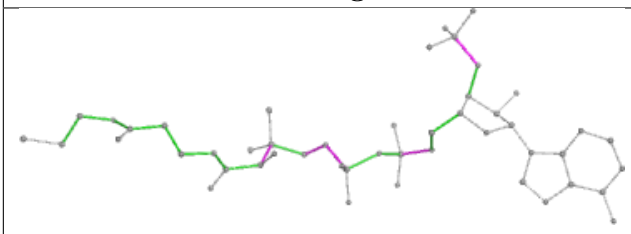
Ligand COA H 1204



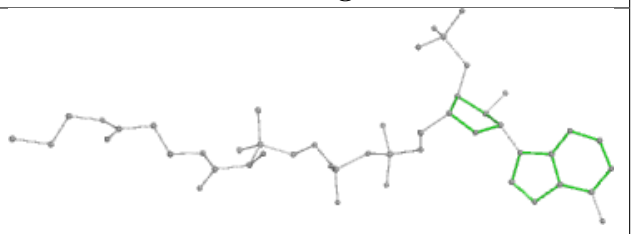
Bond lengths



Bond angles

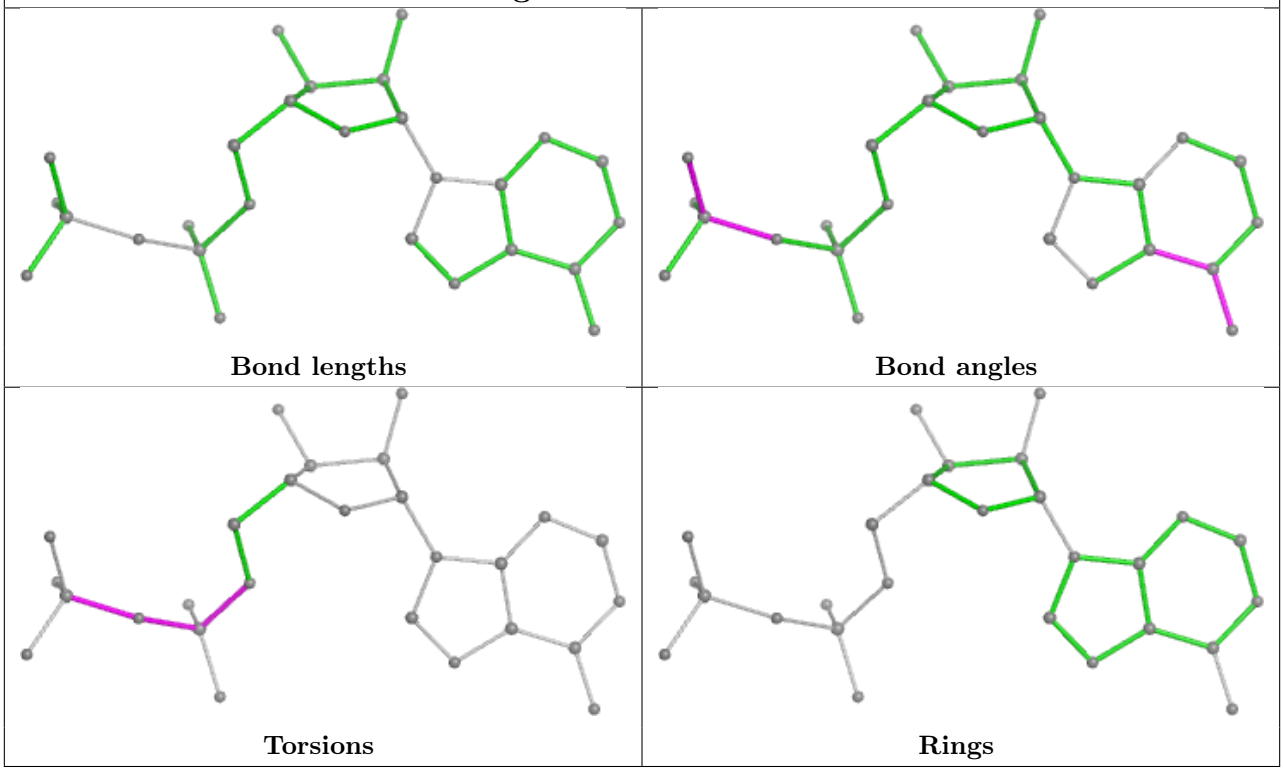


Torsions



Rings

Ligand ADP H 1205



5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

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^{th} 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	A	1033/1050 (98%)	-0.71	0 100 100	76, 130, 172, 197	0
1	B	1033/1050 (98%)	-0.73	1 (0%) 92 91	79, 119, 168, 209	0
1	C	1033/1050 (98%)	-0.70	1 (0%) 92 91	71, 130, 178, 202	0
1	D	1033/1050 (98%)	-0.73	2 (0%) 92 88	71, 116, 152, 246	0
1	E	1033/1050 (98%)	-0.75	2 (0%) 92 88	77, 114, 150, 180	0
1	F	1033/1050 (98%)	-0.68	0 100 100	84, 123, 181, 200	0
1	G	1033/1050 (98%)	-0.71	0 100 100	86, 139, 192, 211	0
1	H	1033/1050 (98%)	-0.73	1 (0%) 92 91	83, 123, 162, 195	0
All	All	8264/8400 (98%)	-0.72	7 (0%) 92 91	71, 123, 175, 246	0

All (7) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	424	ILE	2.6
1	E	277	THR	2.4
1	C	627	GLY	2.4
1	D	421	HIS	2.4
1	E	305	GLY	2.3
1	H	305	GLY	2.1
1	B	759	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 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^{th} 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
3	PO4	G	1202	5/5	0.81	0.10	132,134,137,138	0
3	PO4	F	1202	5/5	0.88	0.09	111,114,116,117	0
3	PO4	C	1202	5/5	0.88	0.09	131,131,132,132	0
2	MG	D	1206	1/1	0.90	0.07	134,134,134,134	0
2	MG	H	1201	1/1	0.91	0.19	89,89,89,89	0
3	PO4	B	1202	5/5	0.92	0.09	113,114,115,115	0
6	ADP	B	1204	27/27	0.92	0.07	140,161,170,172	0
4	FLC	A	1203	13/13	0.93	0.08	138,150,151,152	0
5	COA	A	1204	48/48	0.93	0.08	103,120,141,147	0
5	COA	A	1207	48/48	0.93	0.08	105,113,134,138	0
3	PO4	E	1202	5/5	0.93	0.06	100,104,105,106	0
6	ADP	F	1205	27/27	0.93	0.07	149,156,180,183	0
4	FLC	H	1203	13/13	0.94	0.06	131,132,133,134	0
3	PO4	H	1202	5/5	0.94	0.08	115,116,117,118	0
3	PO4	A	1202	5/5	0.94	0.06	132,132,133,134	0
5	COA	E	1204	48/48	0.94	0.08	90,109,125,129	0
5	COA	H	1204	48/48	0.94	0.09	107,112,128,133	0
6	ADP	A	1205	27/27	0.94	0.06	122,132,145,145	0
4	FLC	E	1203	13/13	0.94	0.07	106,116,121,121	0
6	ADP	E	1205	27/27	0.94	0.08	117,130,134,137	0
4	FLC	G	1203	13/13	0.94	0.07	133,143,151,153	0
6	ADP	H	1205	27/27	0.94	0.06	102,123,128,128	0
3	PO4	D	1202	5/5	0.95	0.06	115,115,116,116	0
4	FLC	F	1203	13/13	0.95	0.08	115,134,140,143	0
6	ADP	C	1205	27/27	0.95	0.06	132,149,158,158	0
2	MG	C	1201	1/1	0.95	0.07	94,94,94,94	0
5	COA	F	1204	48/48	0.95	0.07	94,115,128,132	0
2	MG	E	1201	1/1	0.95	0.12	71,71,71,71	0
2	MG	A	1201	1/1	0.96	0.10	100,100,100,100	0
4	FLC	C	1203	13/13	0.96	0.06	132,137,140,142	0
6	ADP	D	1205	27/27	0.96	0.06	114,139,148,148	0
5	COA	G	1204	48/48	0.96	0.06	104,125,137,144	0
4	FLC	D	1203	13/13	0.96	0.05	97,108,123,124	0
6	ADP	G	1205	27/27	0.96	0.05	131,143,148,148	0
5	COA	D	1204	48/48	0.96	0.07	98,114,127,128	0
4	FLC	B	1203	13/13	0.97	0.06	117,120,122,122	0
2	MG	F	1201	1/1	0.97	0.10	82,82,82,82	0

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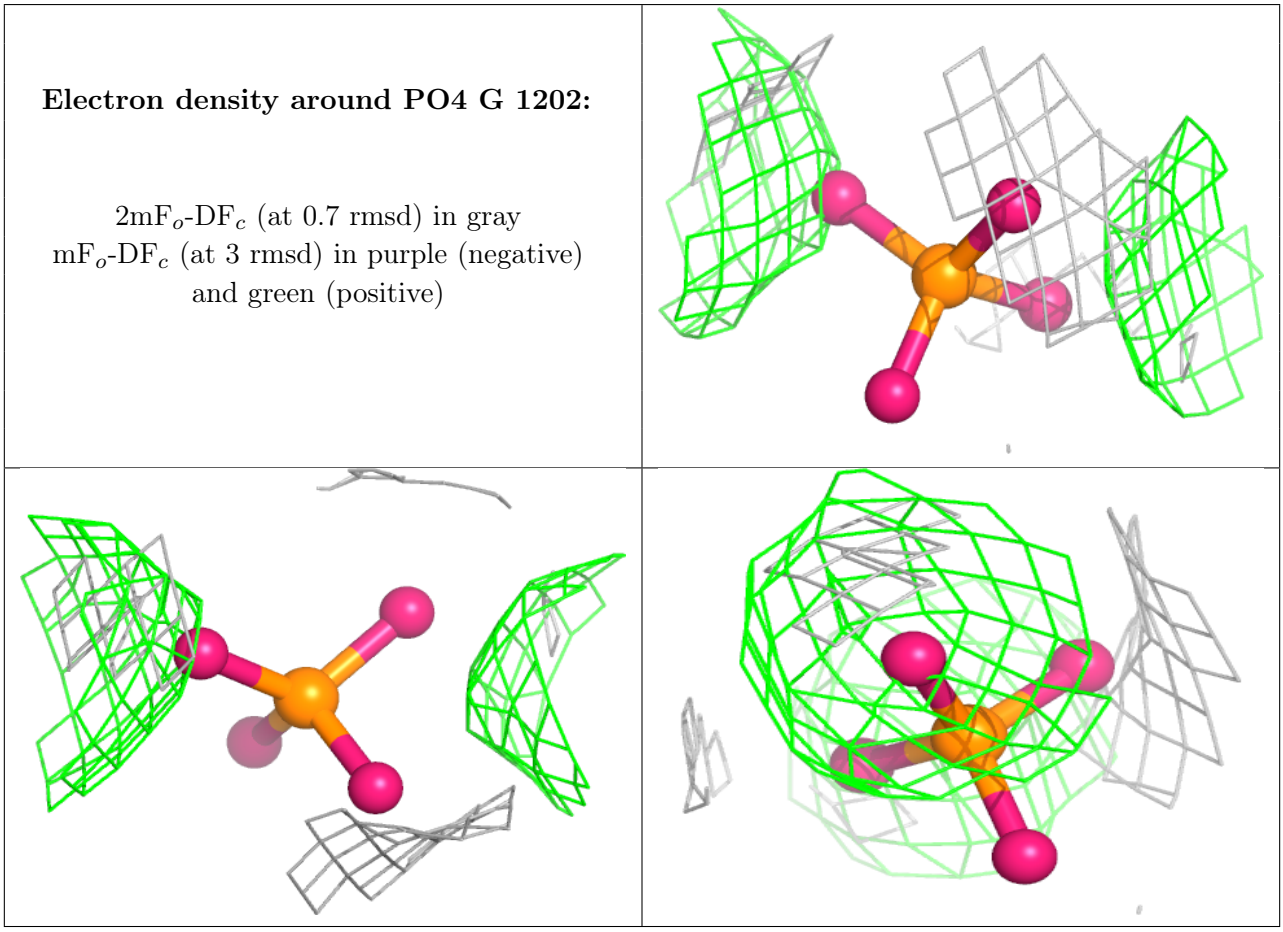
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	MG	B	1201	1/1	0.97	0.12	80,80,80,80	0
2	MG	H	1206	1/1	0.97	0.05	102,102,102,102	0
5	COA	C	1204	48/48	0.97	0.07	101,119,132,143	0
2	MG	C	1206	1/1	0.97	0.07	146,146,146,146	0
2	MG	D	1201	1/1	0.98	0.06	76,76,76,76	0
2	MG	F	1206	1/1	0.98	0.05	148,148,148,148	0
2	MG	G	1201	1/1	0.99	0.07	79,79,79,79	0
2	MG	G	1206	1/1	0.99	0.03	124,124,124,124	0
2	MG	A	1206	1/1	0.99	0.02	89,89,89,89	0
2	MG	E	1206	1/1	0.99	0.05	118,118,118,118	0
2	MG	B	1205	1/1	1.00	0.04	127,127,127,127	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.

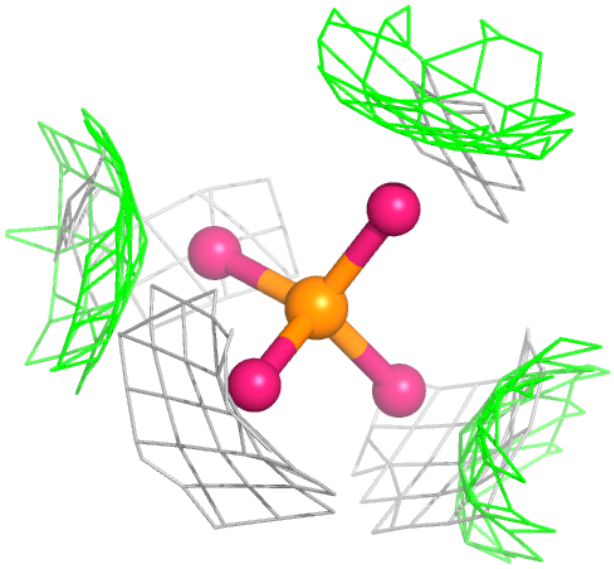
Electron density around PO4 G 1202:

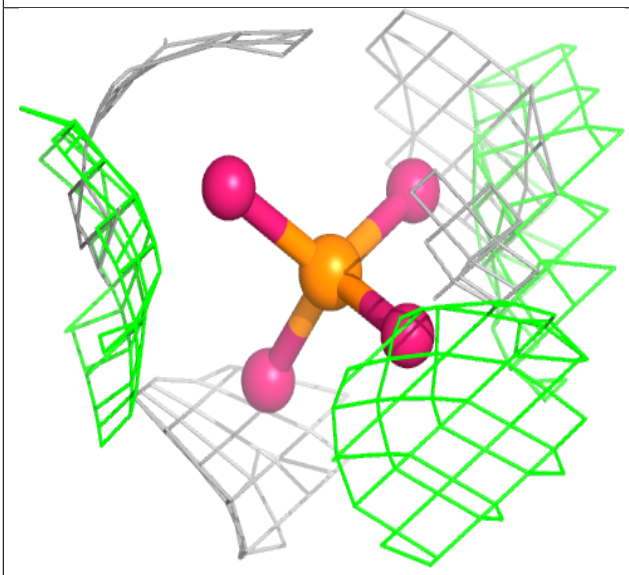
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

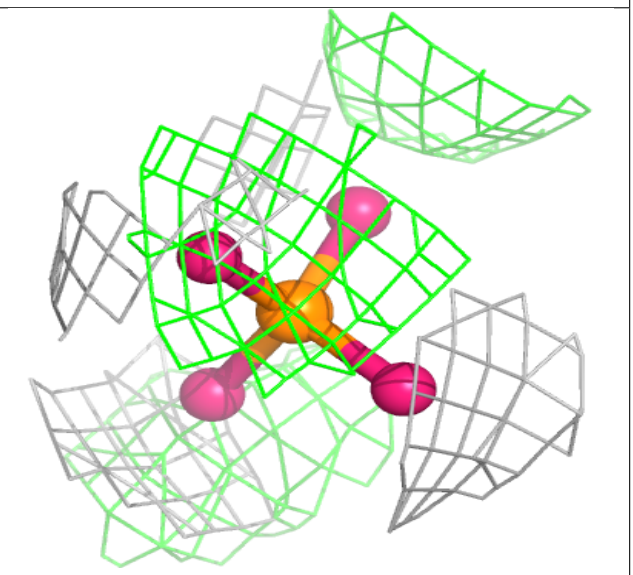


Electron density around PO4 F 1202:

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

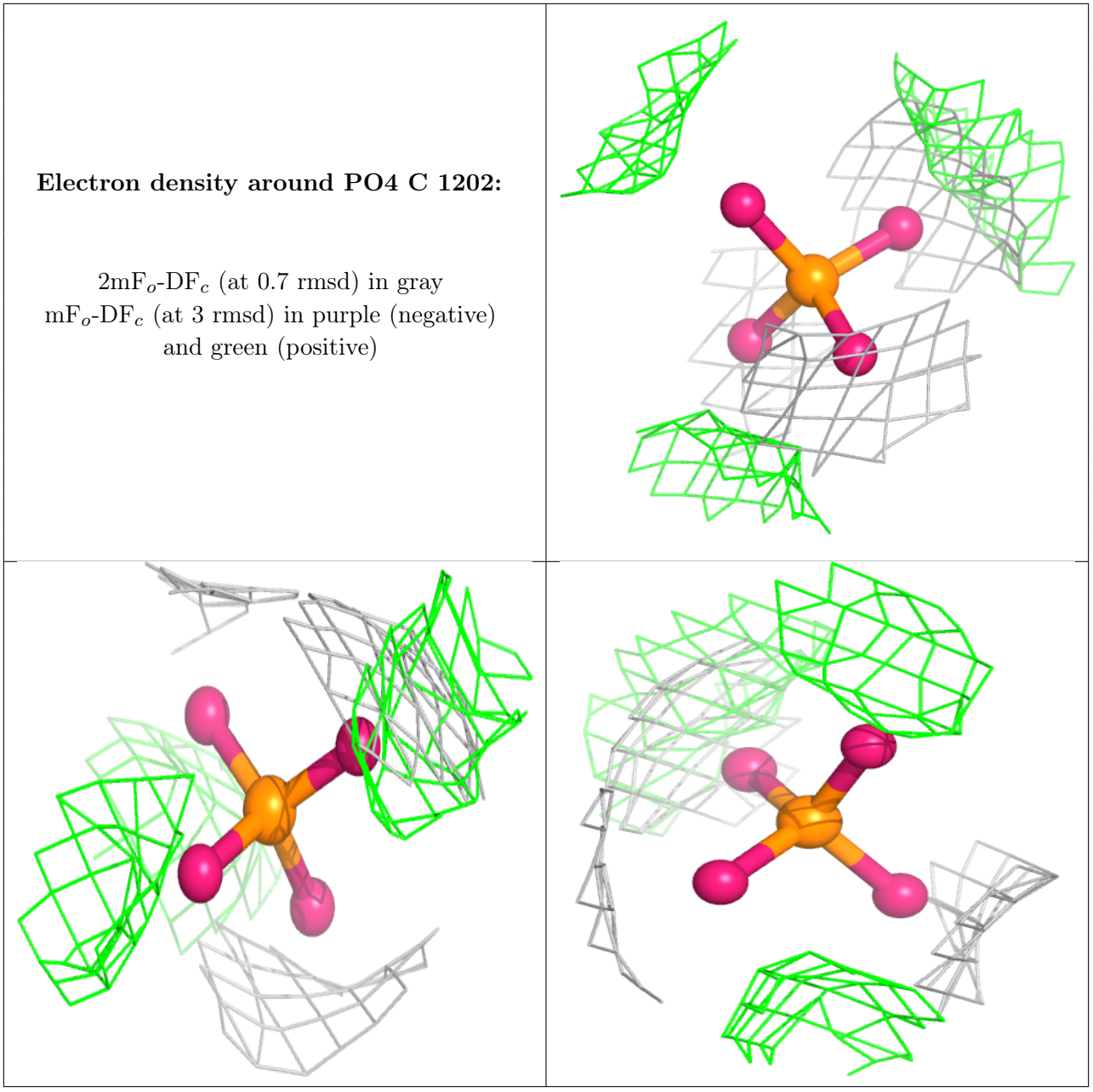






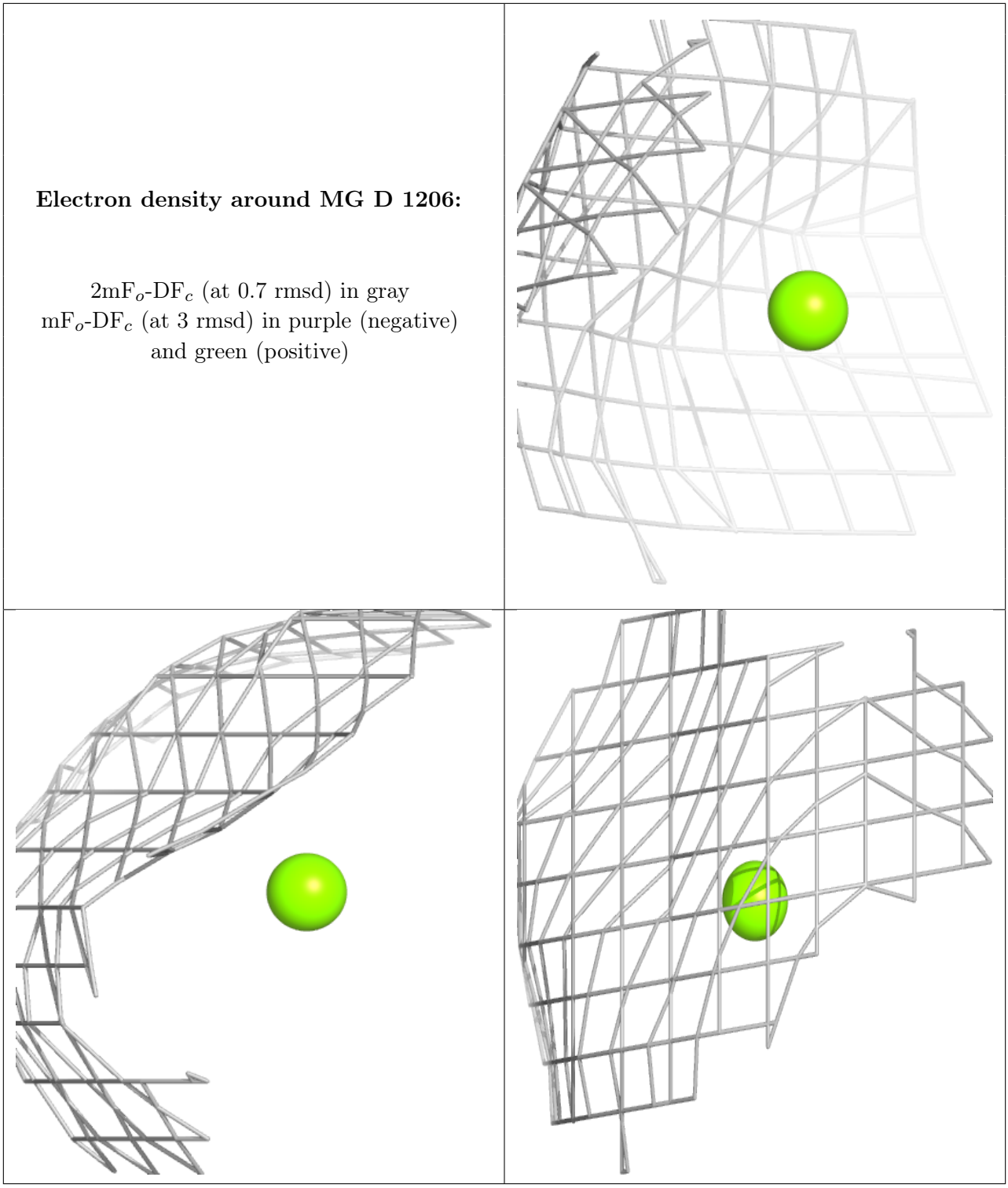
Electron density around PO4 C 1202:

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



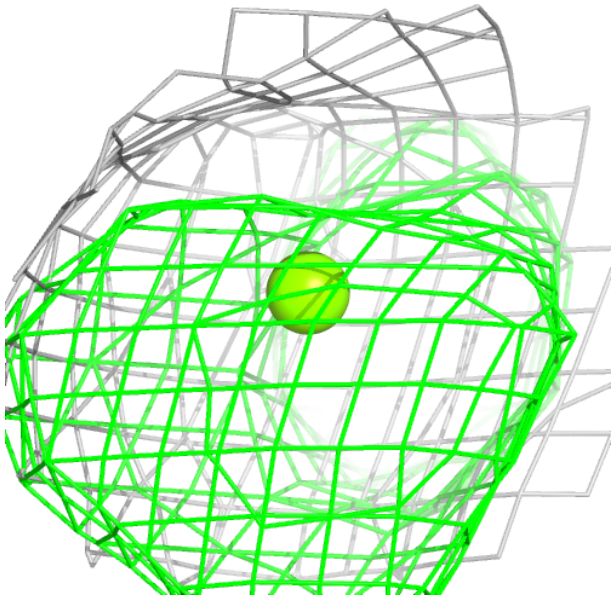
Electron density around MG D 1206:

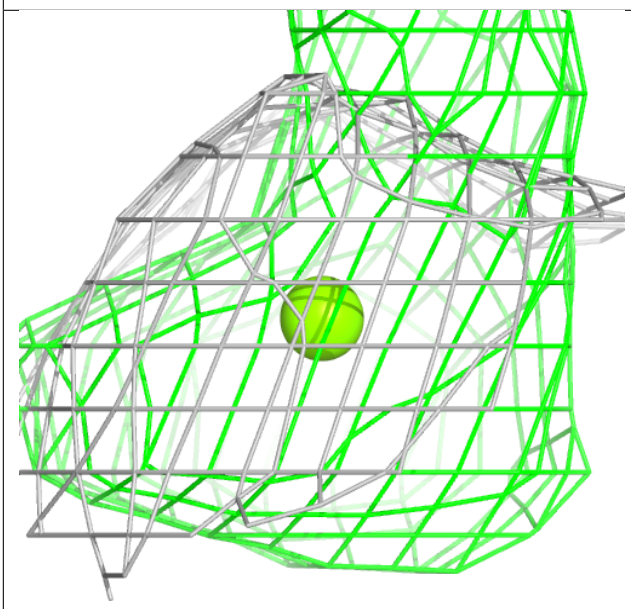
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

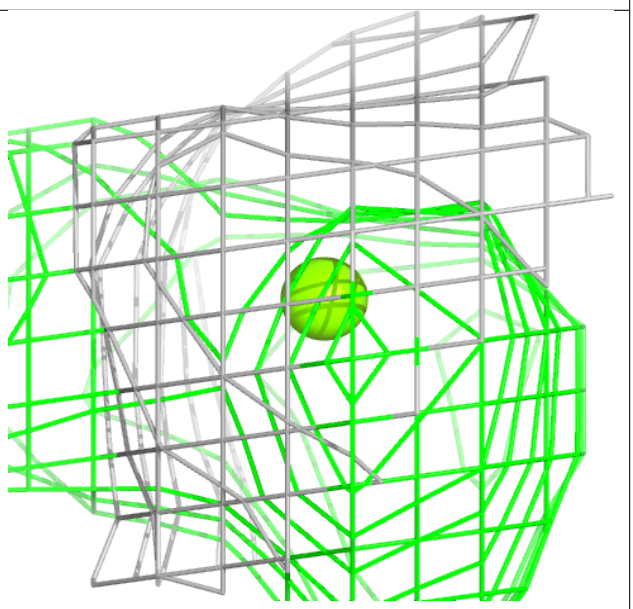


Electron density around MG H 1201:

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

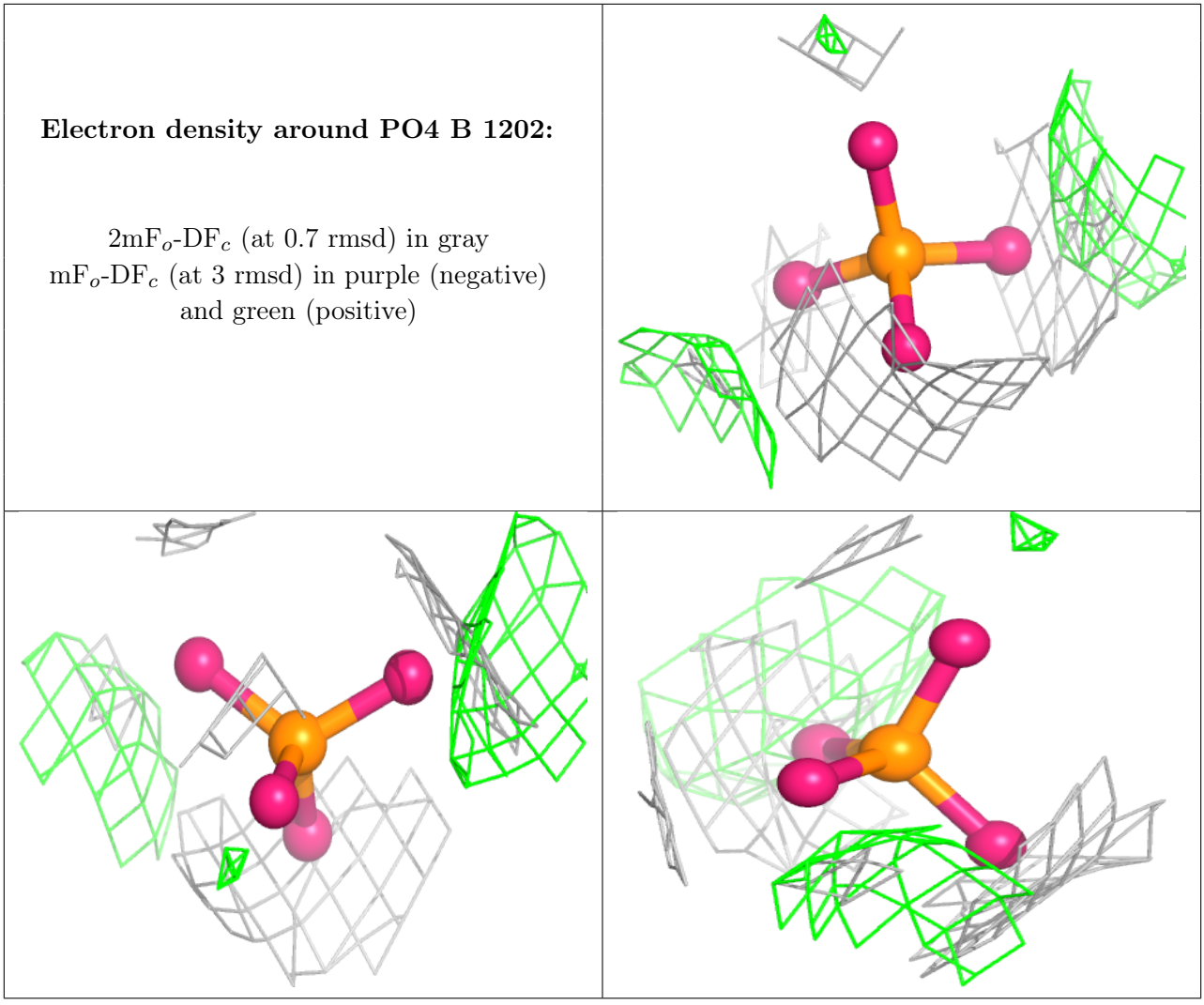






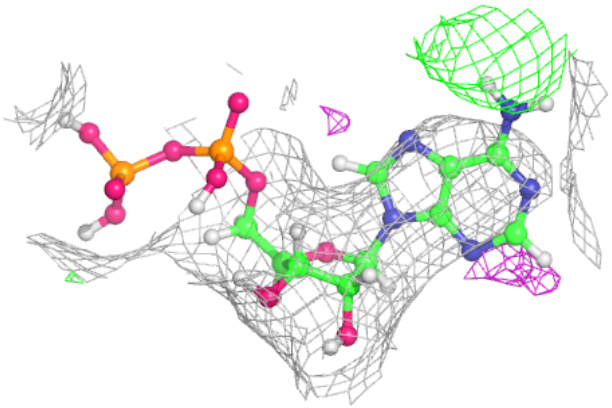
Electron density around PO4 B 1202:

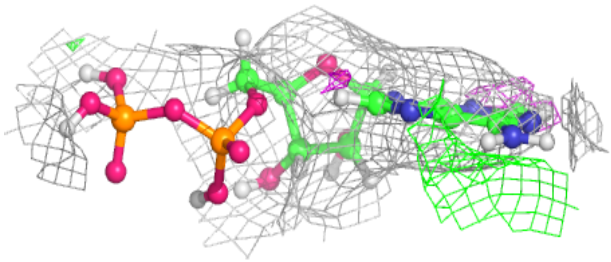
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

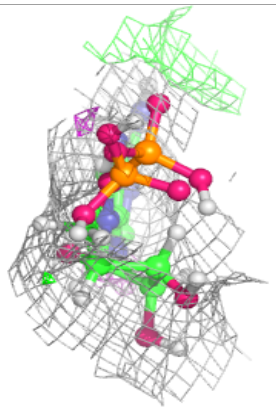


Electron density around ADP B 1204:

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

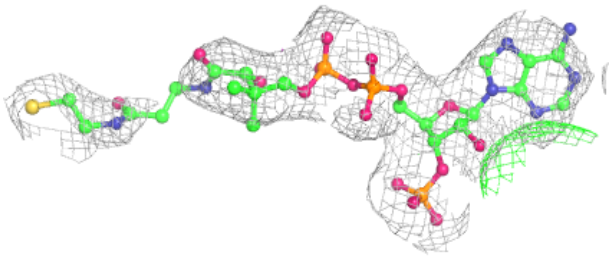


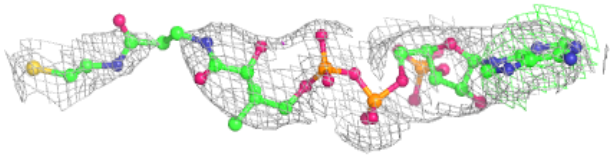


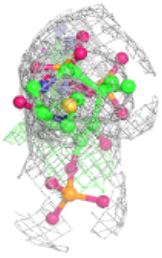


Electron density around COA A 1204:

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

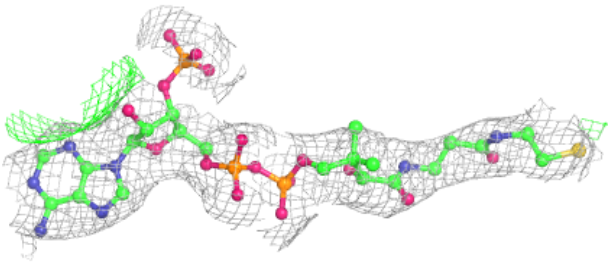


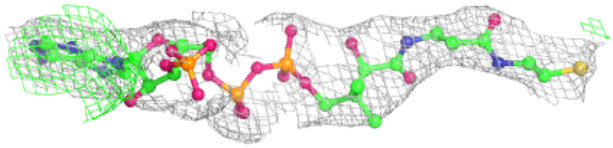


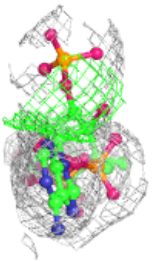


Electron density around COA A 1207:

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

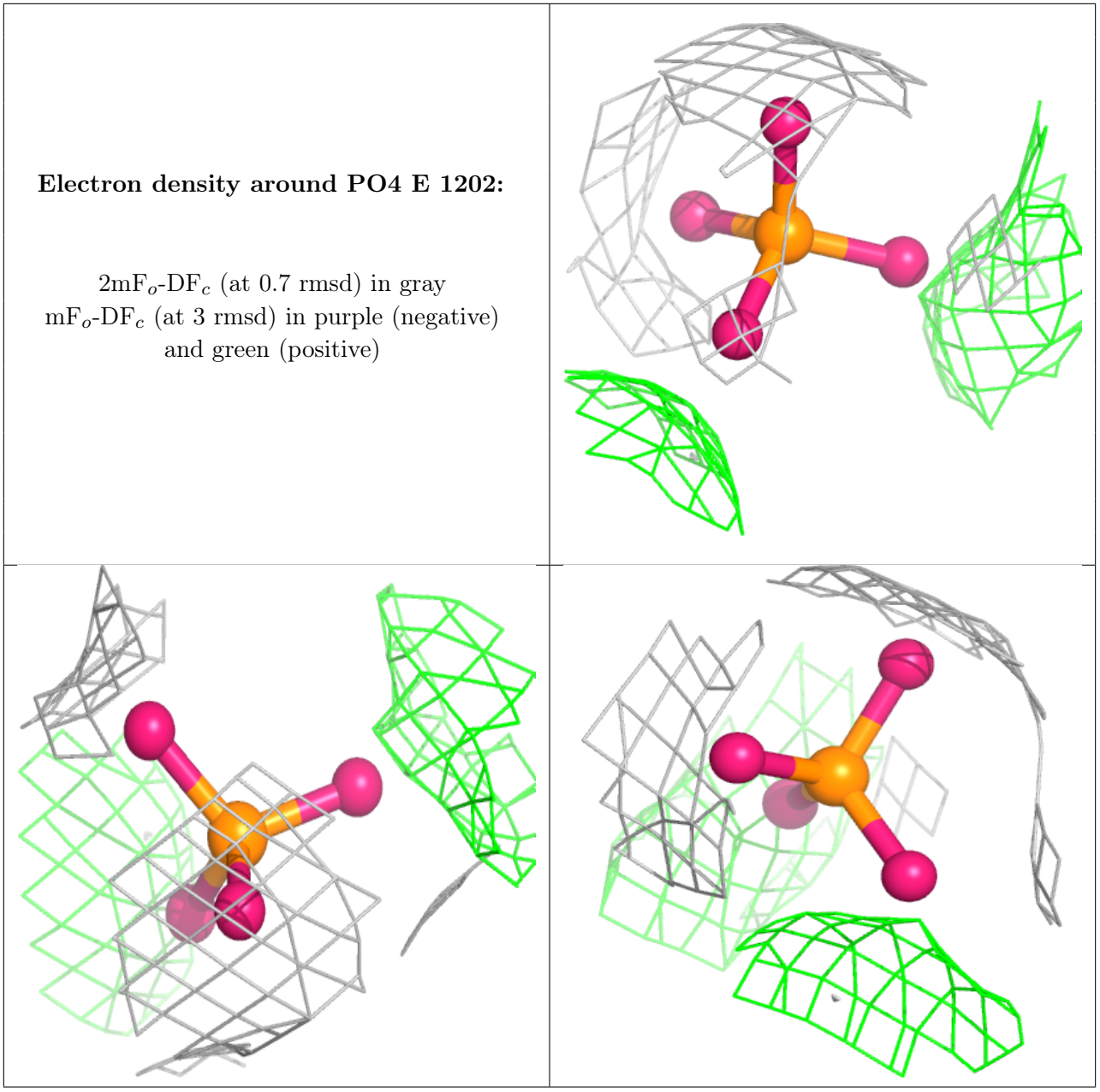






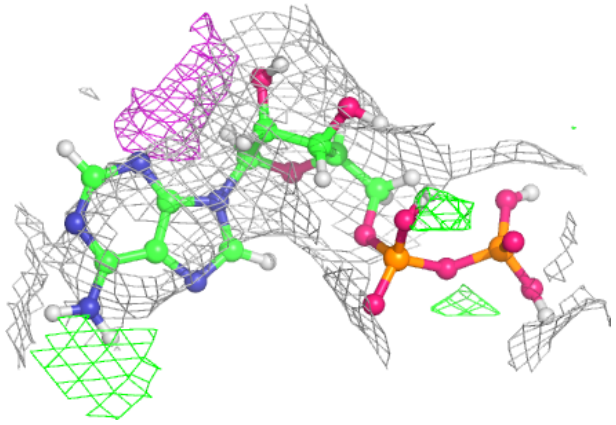
Electron density around PO4 E 1202:

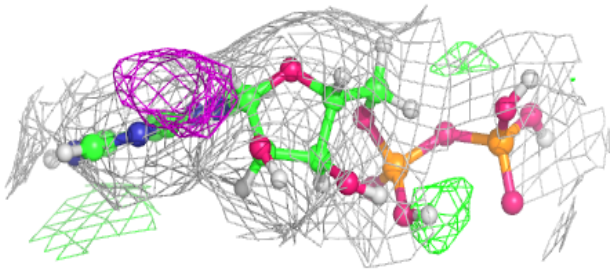
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

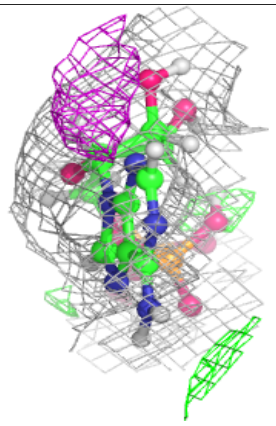


Electron density around ADP F 1205:

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

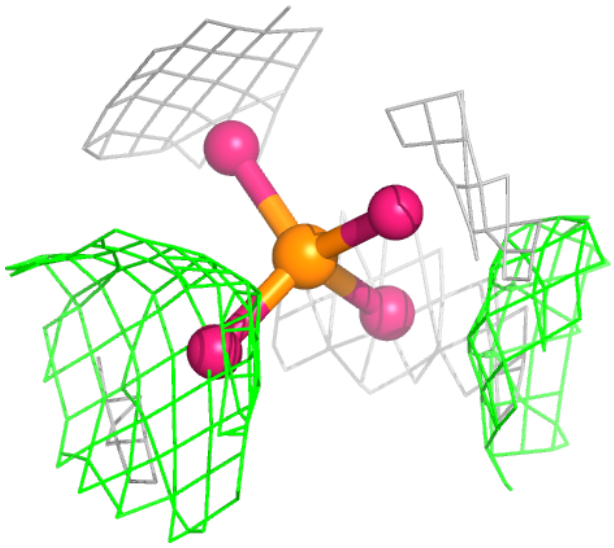


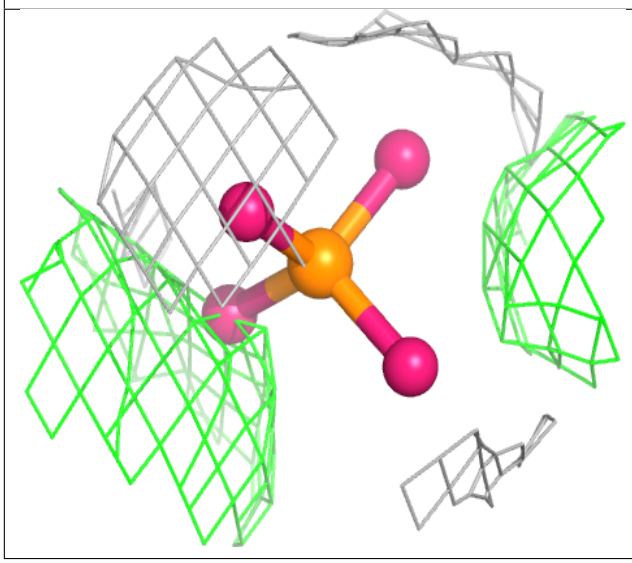


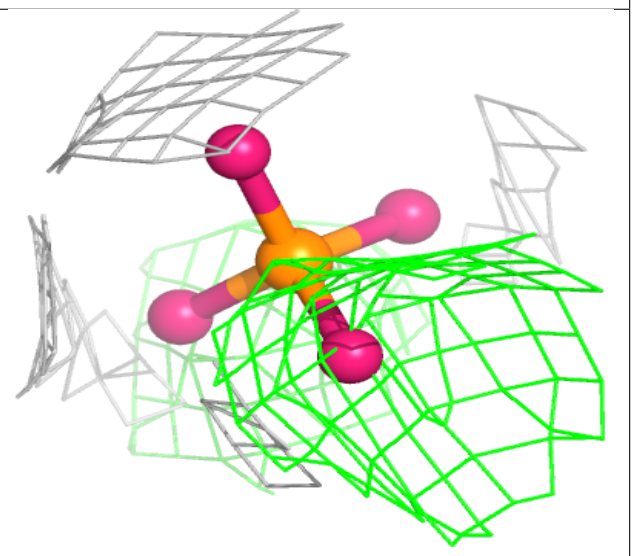


Electron density around PO4 H 1202:

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

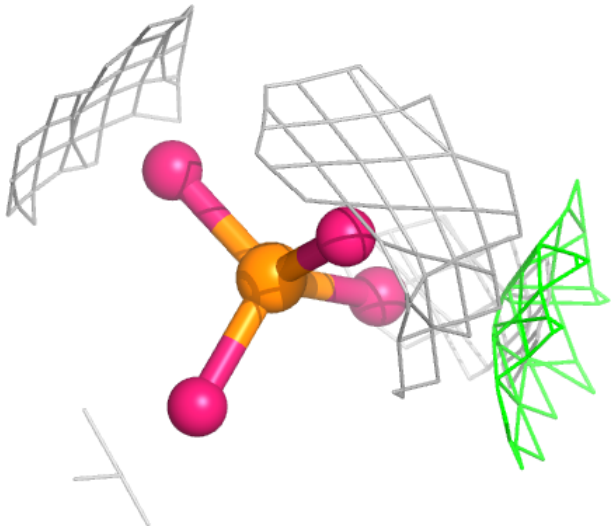


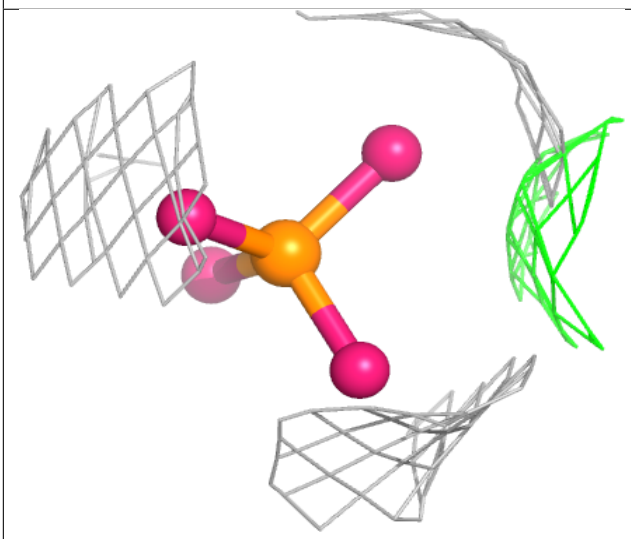


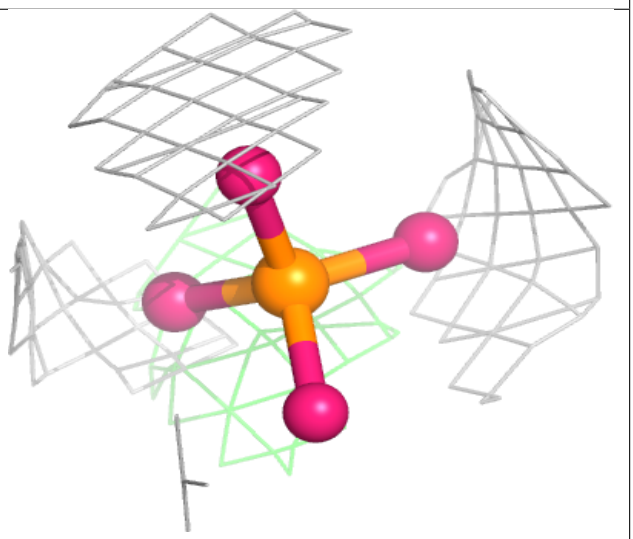


Electron density around PO4 A 1202:

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

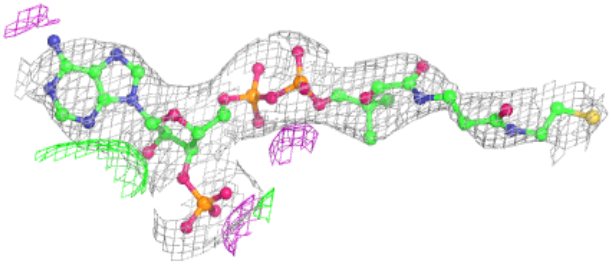


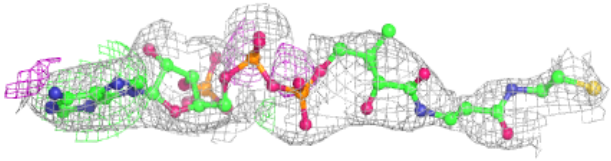


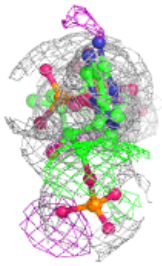


Electron density around COA E 1204:

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

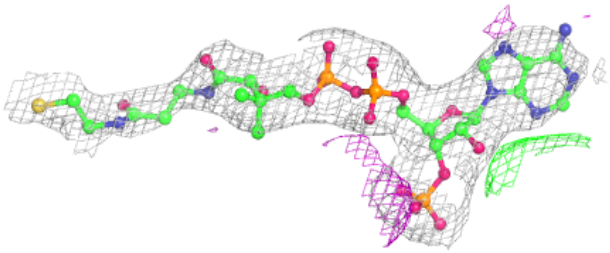


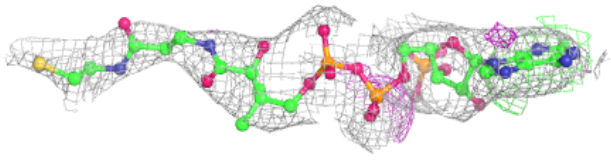


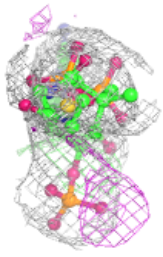


Electron density around COA H 1204:

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

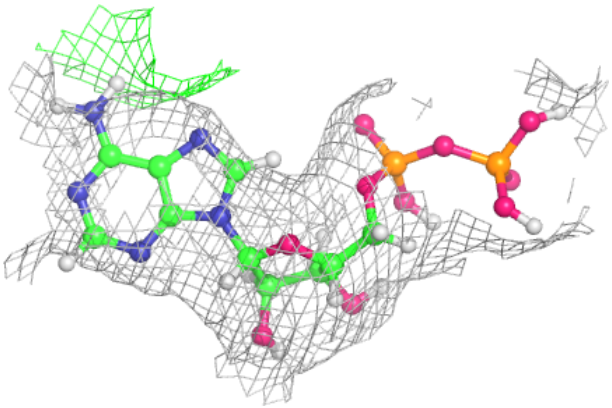


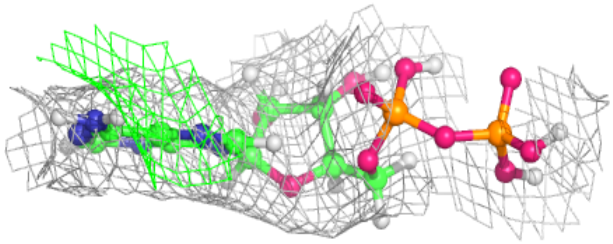


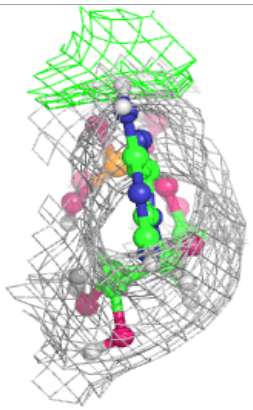


Electron density around ADP A 1205:

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

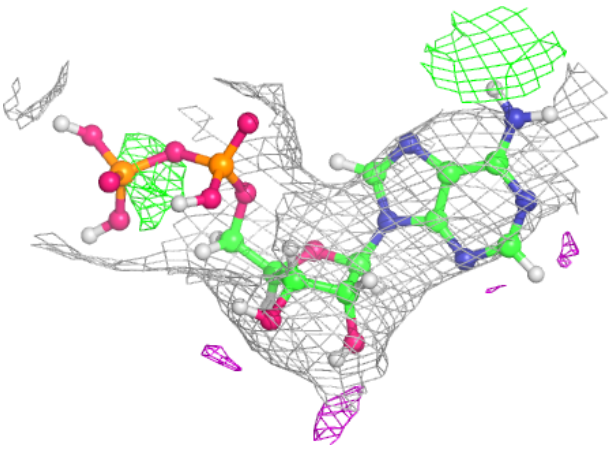


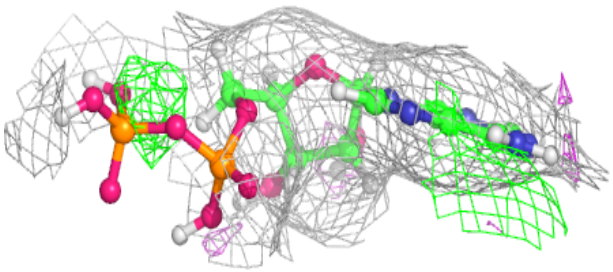


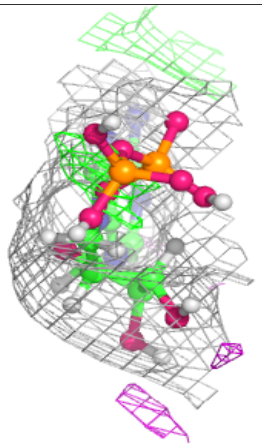


Electron density around ADP E 1205:

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

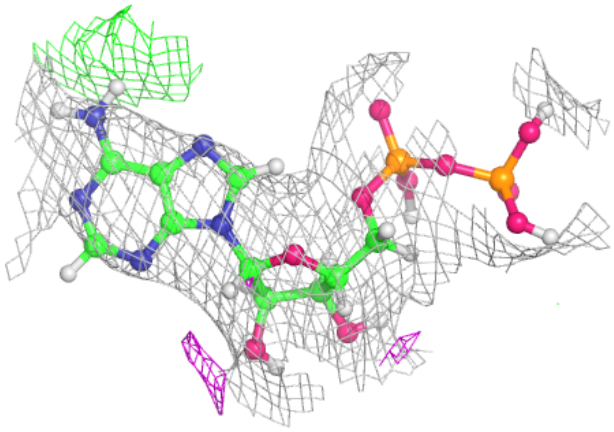


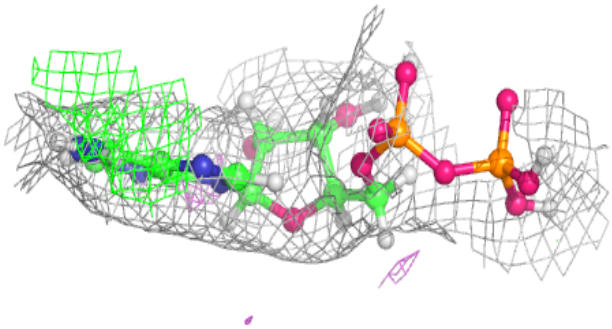


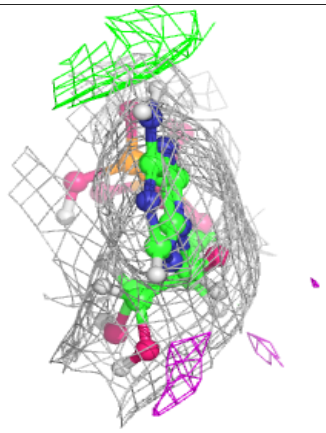


Electron density around ADP H 1205:

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

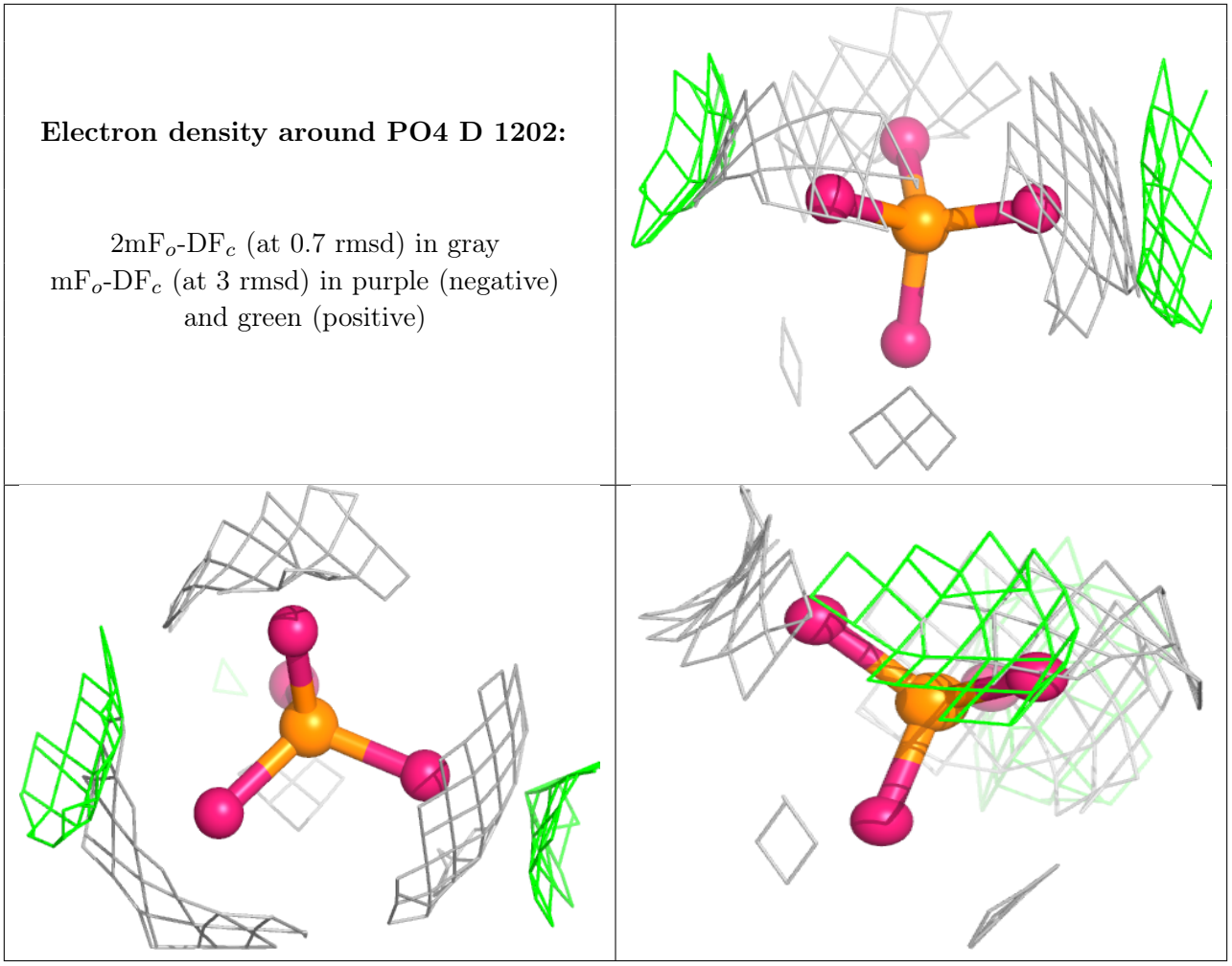






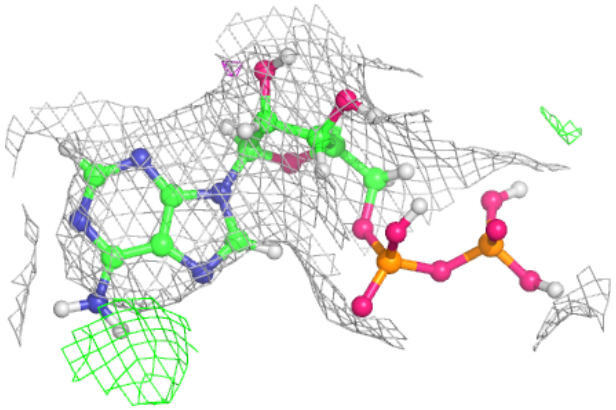
Electron density around PO4 D 1202:

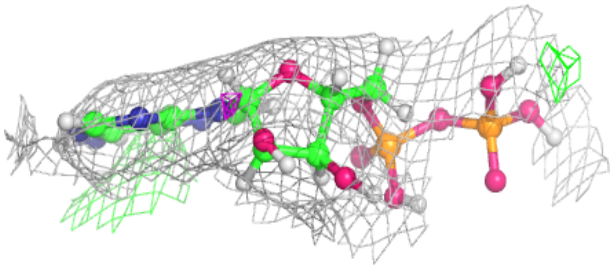
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

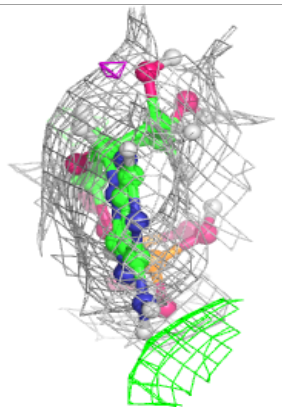


Electron density around ADP C 1205:

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

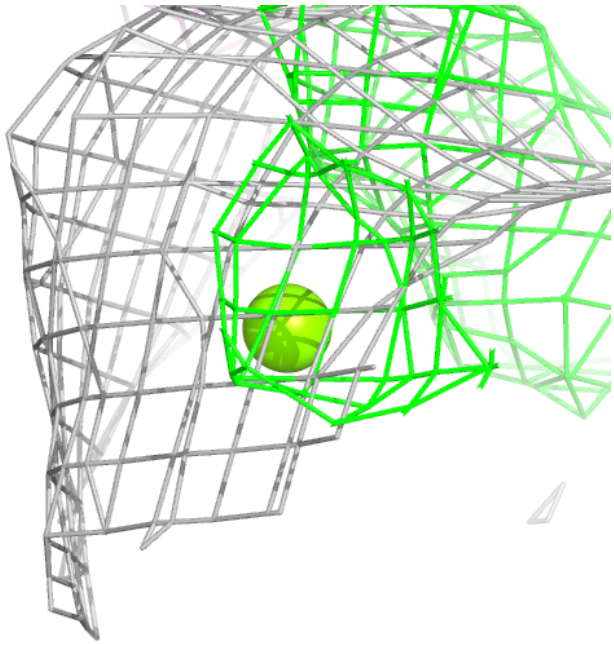


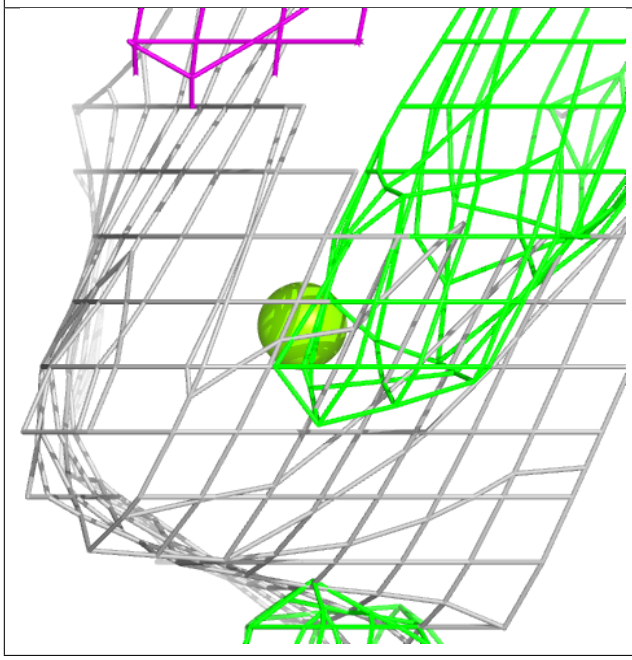


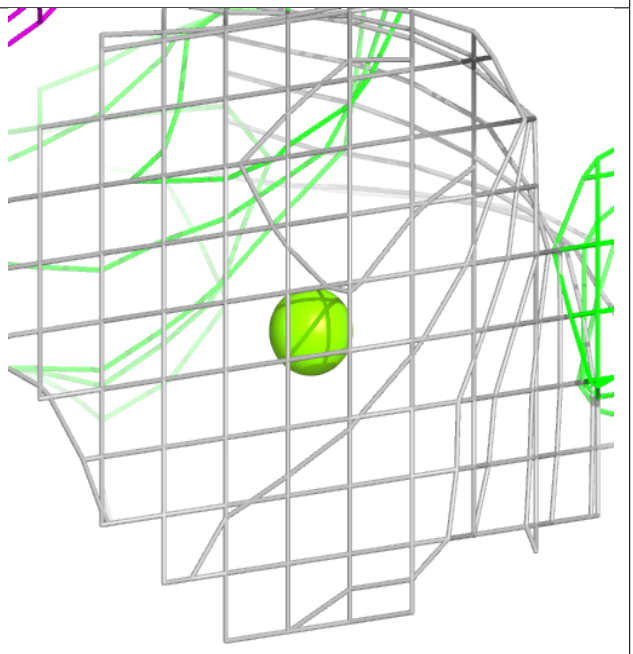


Electron density around MG C 1201:

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

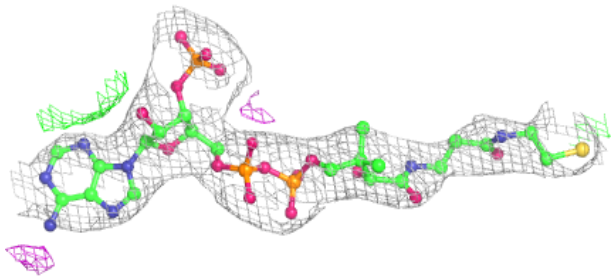


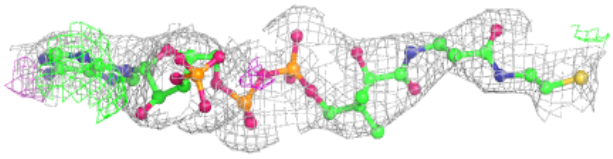


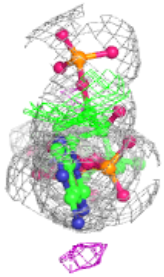


Electron density around COA F 1204:

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

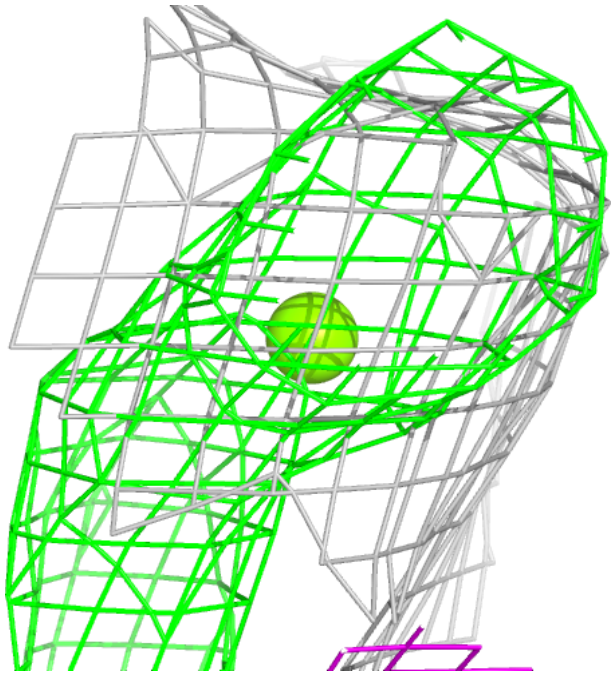


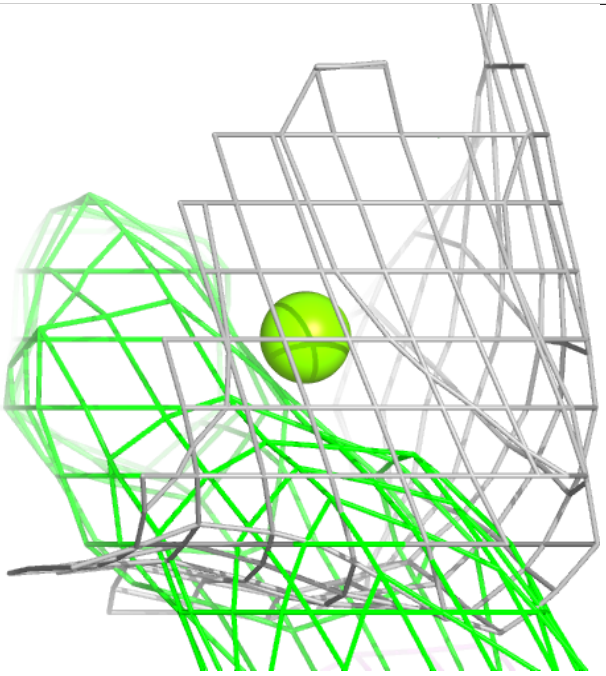


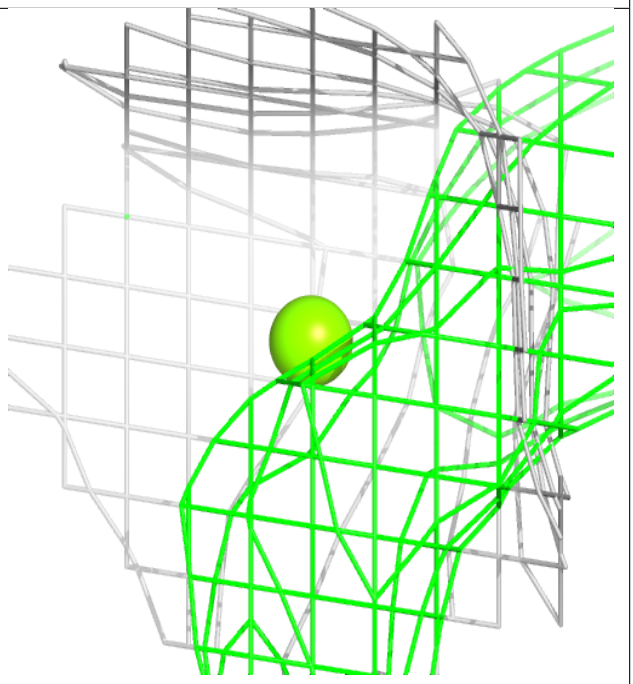


Electron density around MG E 1201:

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

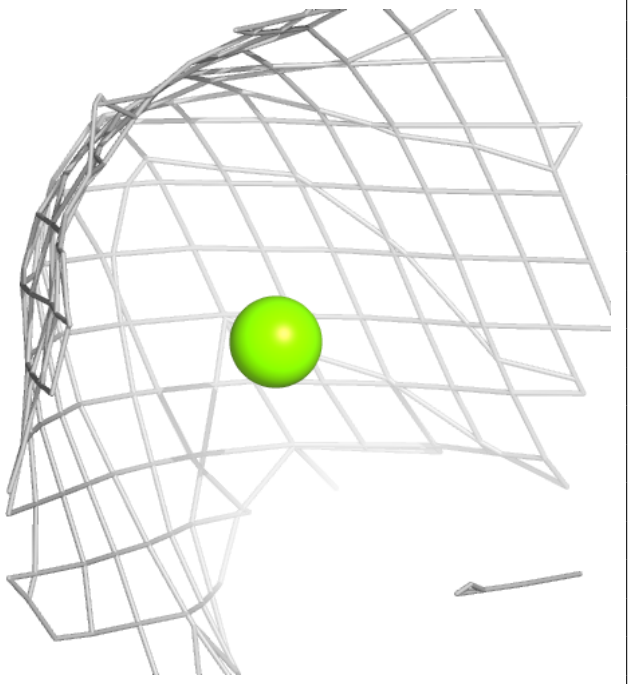


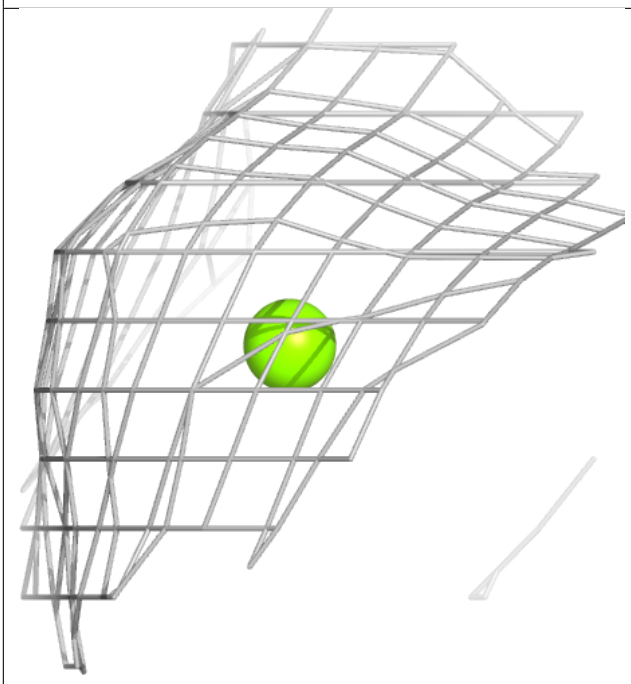


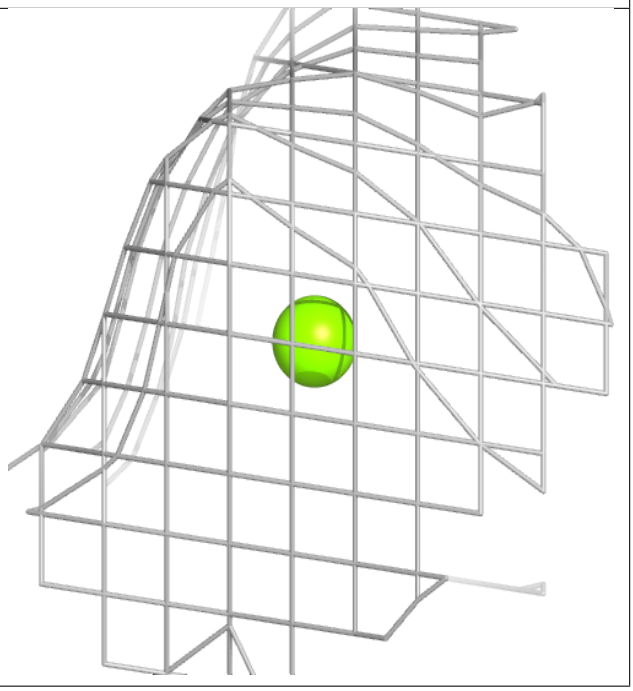


Electron density around MG A 1201:

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

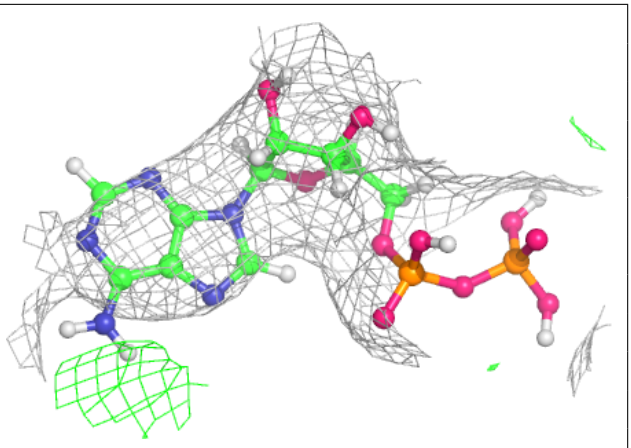


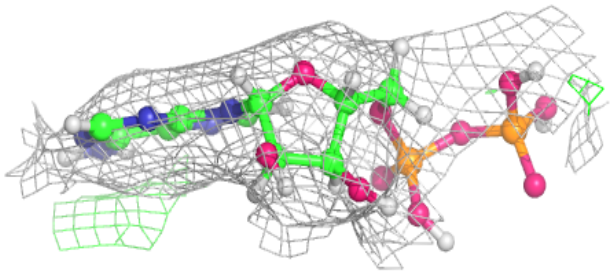


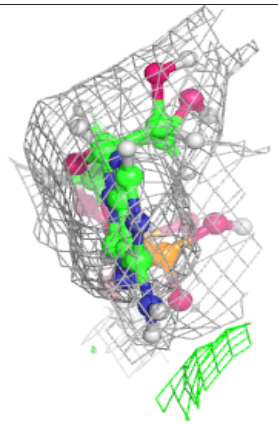


Electron density around ADP D 1205:

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

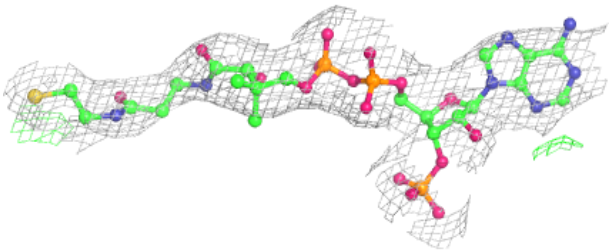


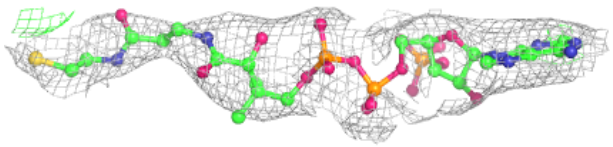




Electron density around COA G 1204:

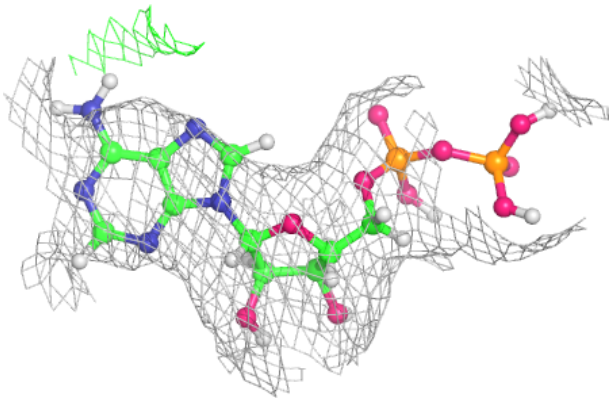
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

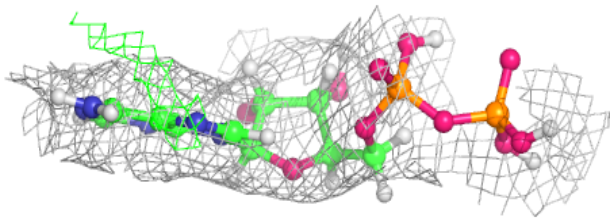


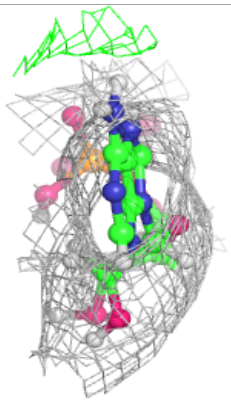


Electron density around ADP G 1205:

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

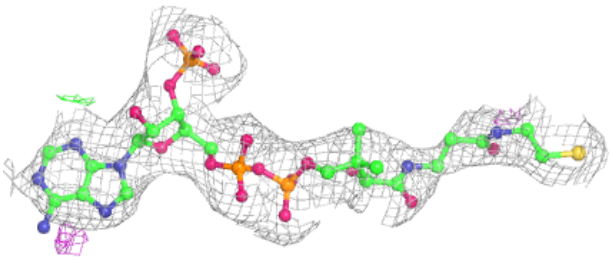


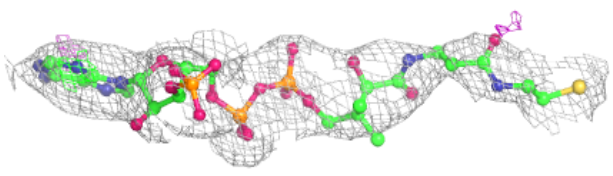




Electron density around COA D 1204:

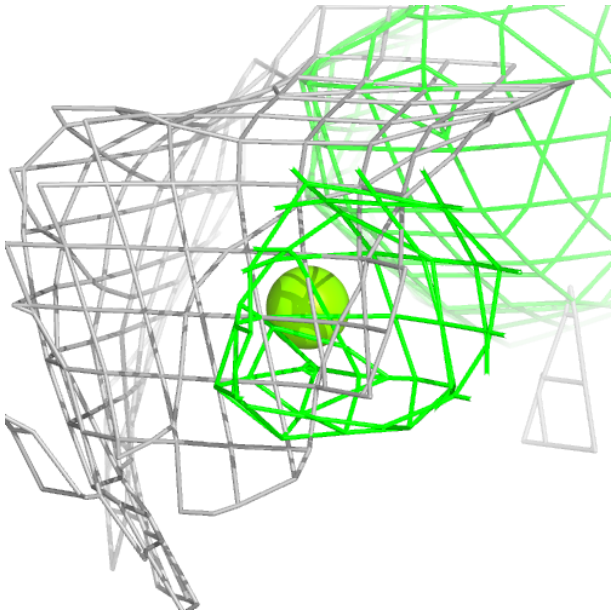
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

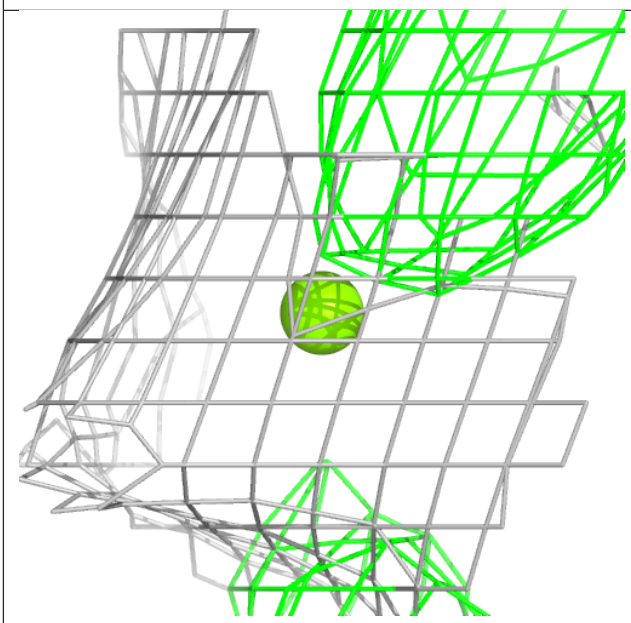


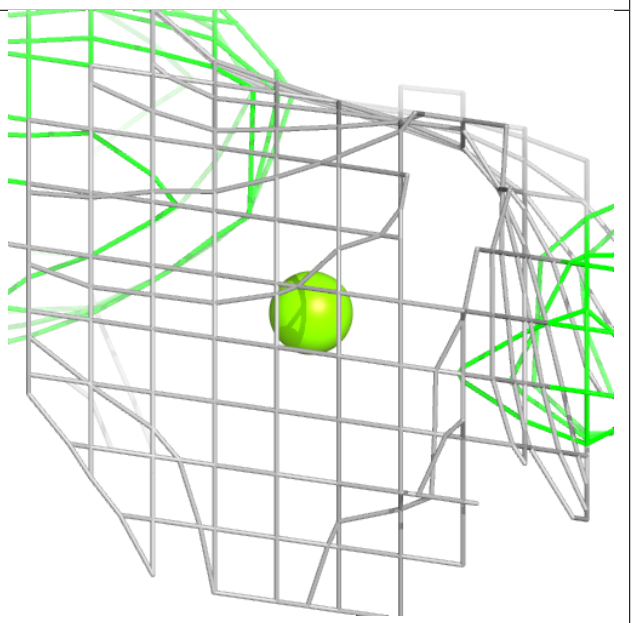


Electron density around MG F 1201:

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

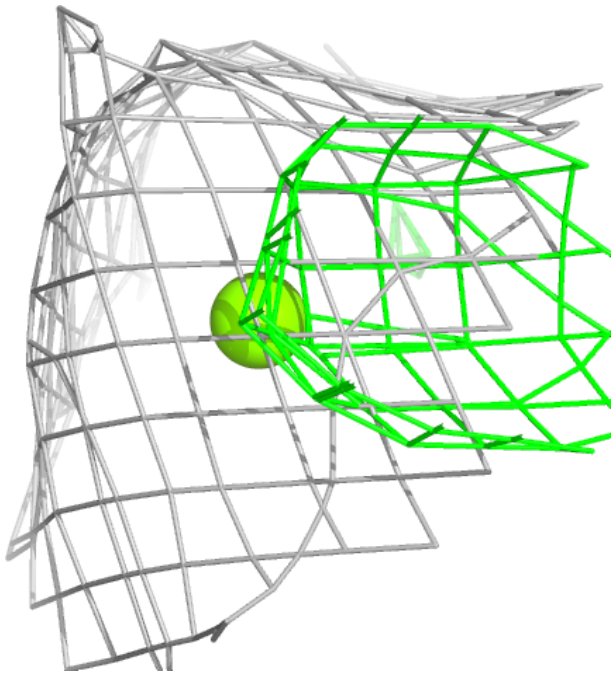


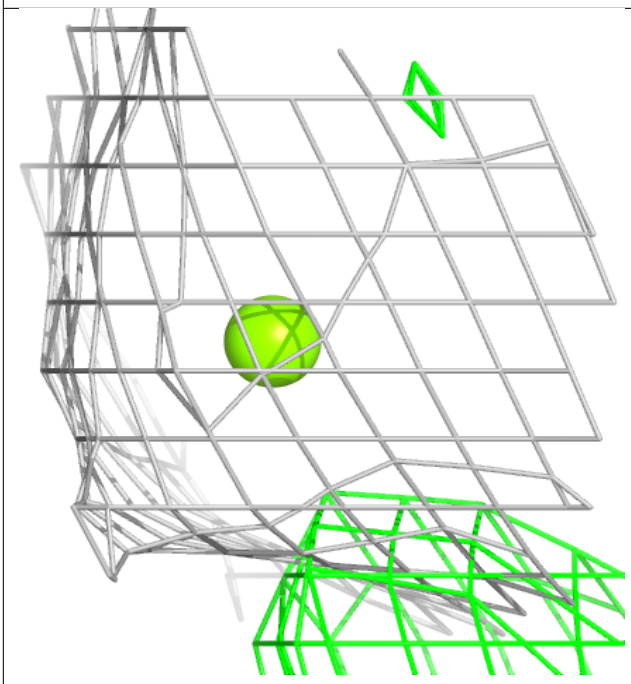


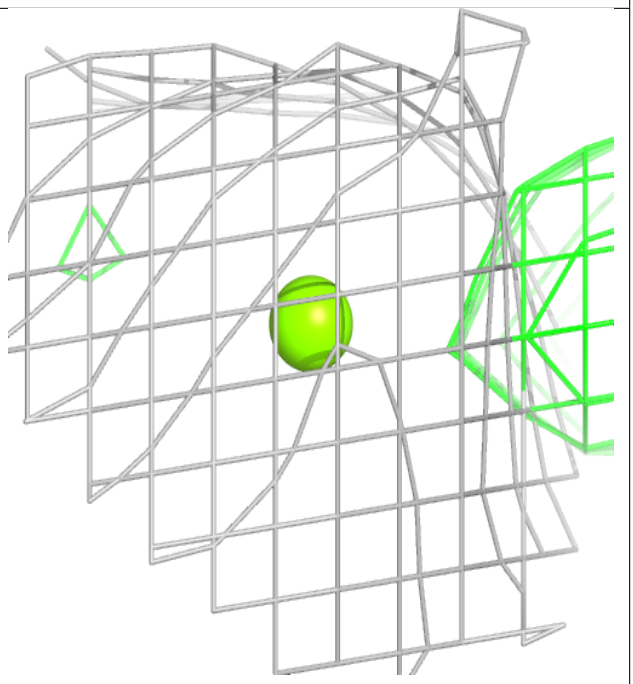


Electron density around MG B 1201:

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

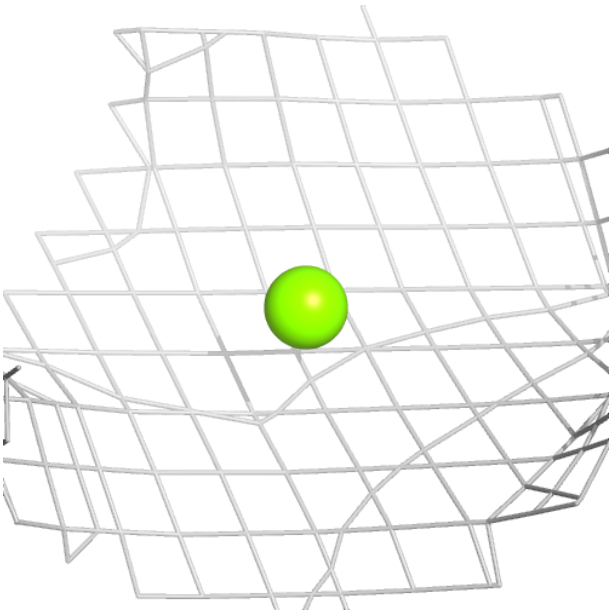


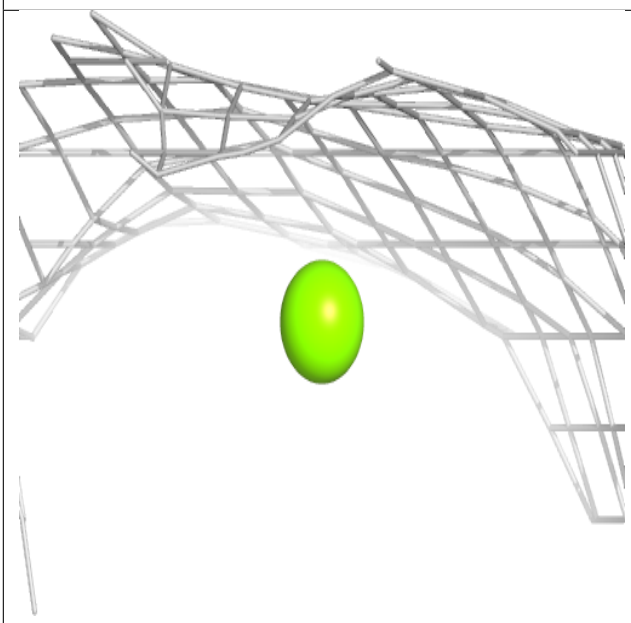


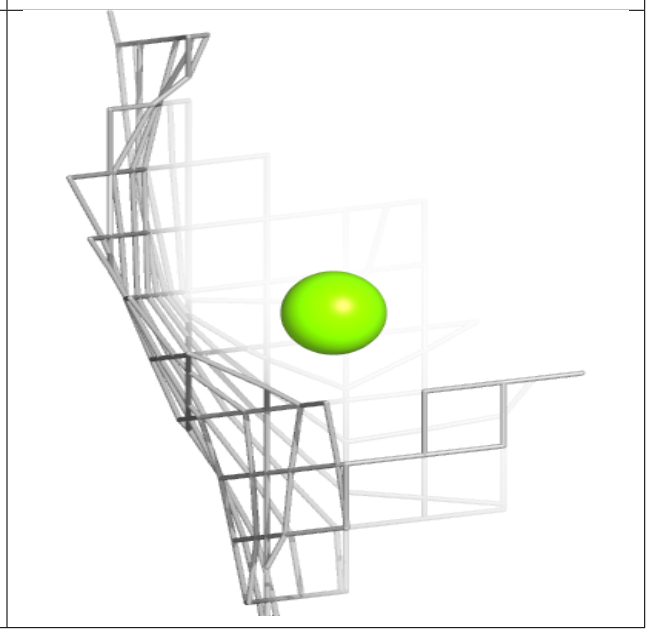


Electron density around MG H 1206:

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

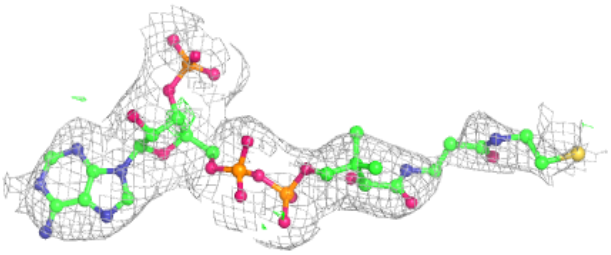


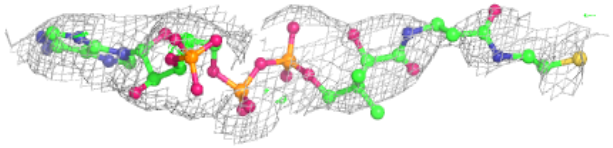


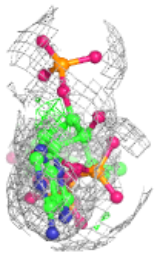


Electron density around COA C 1204:

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

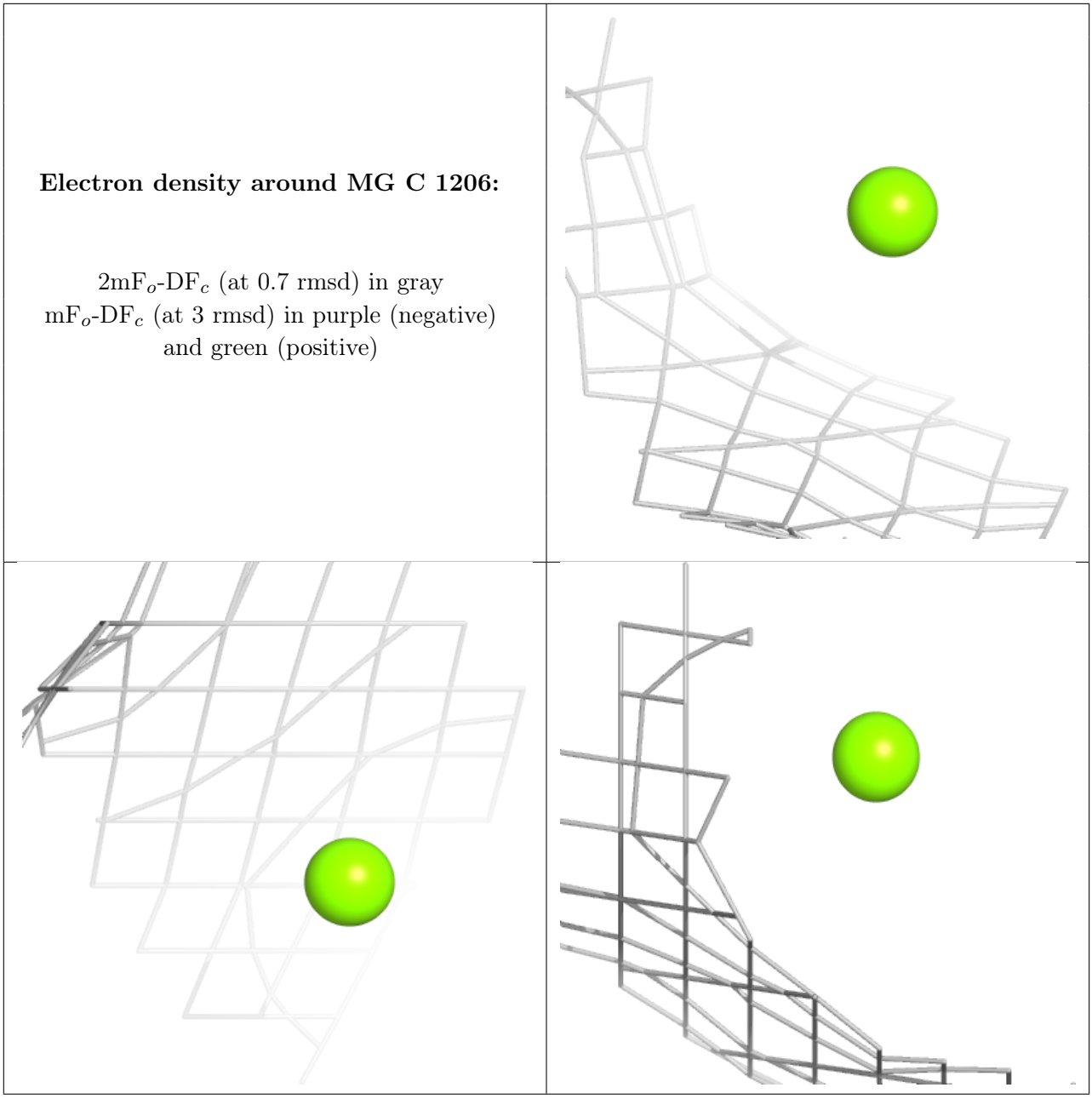






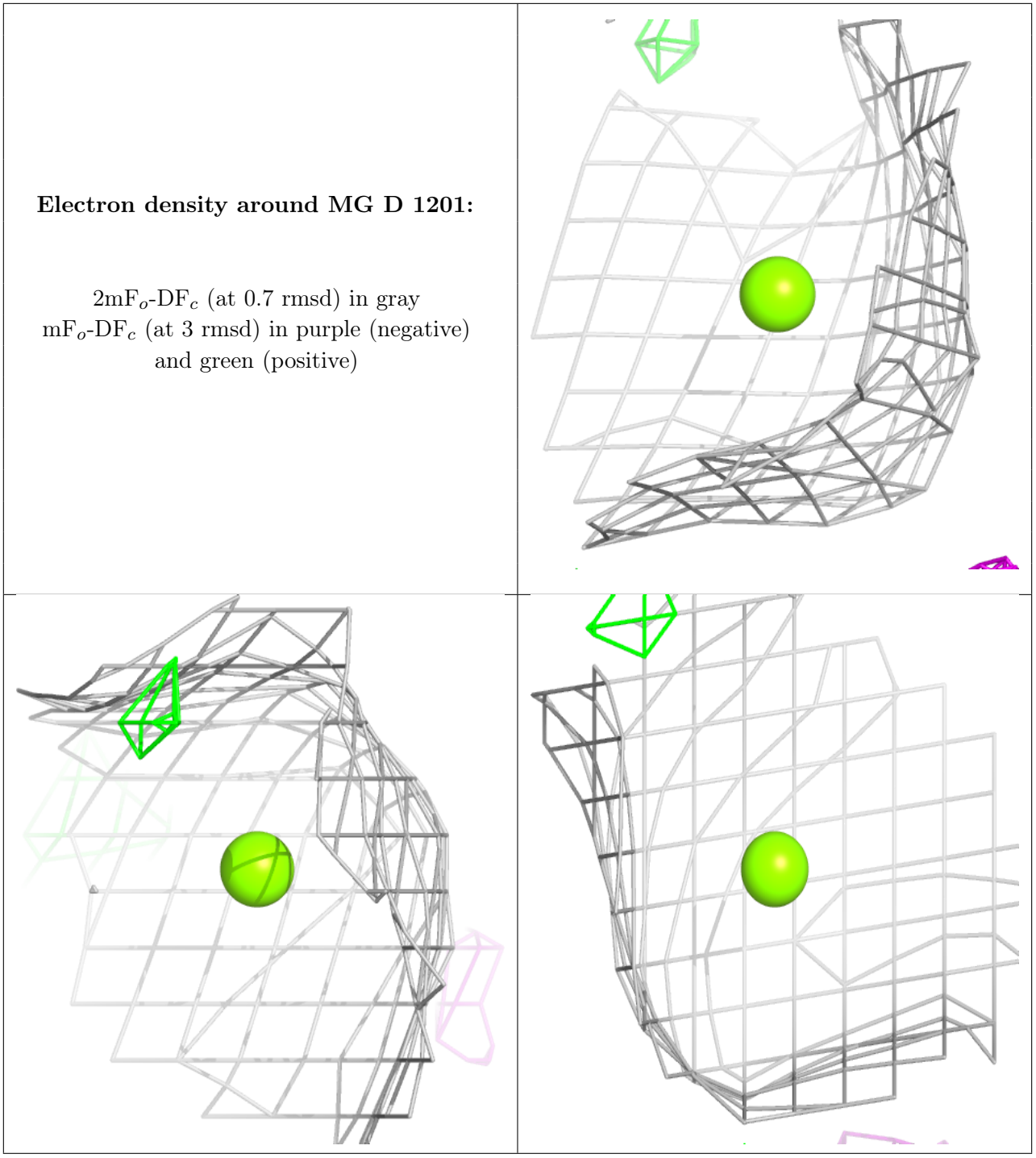
Electron density around MG C 1206:

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



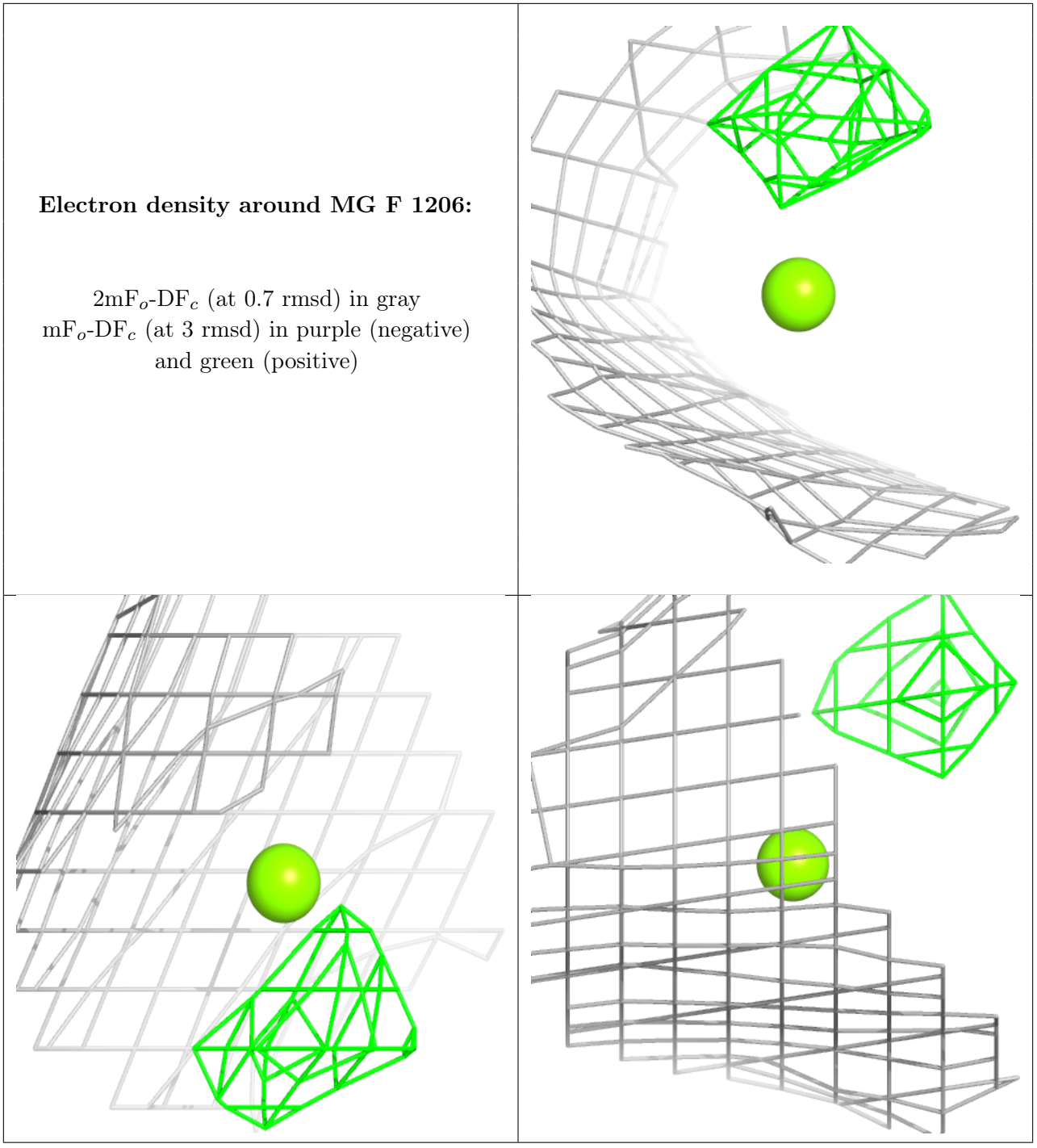
Electron density around MG D 1201:

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



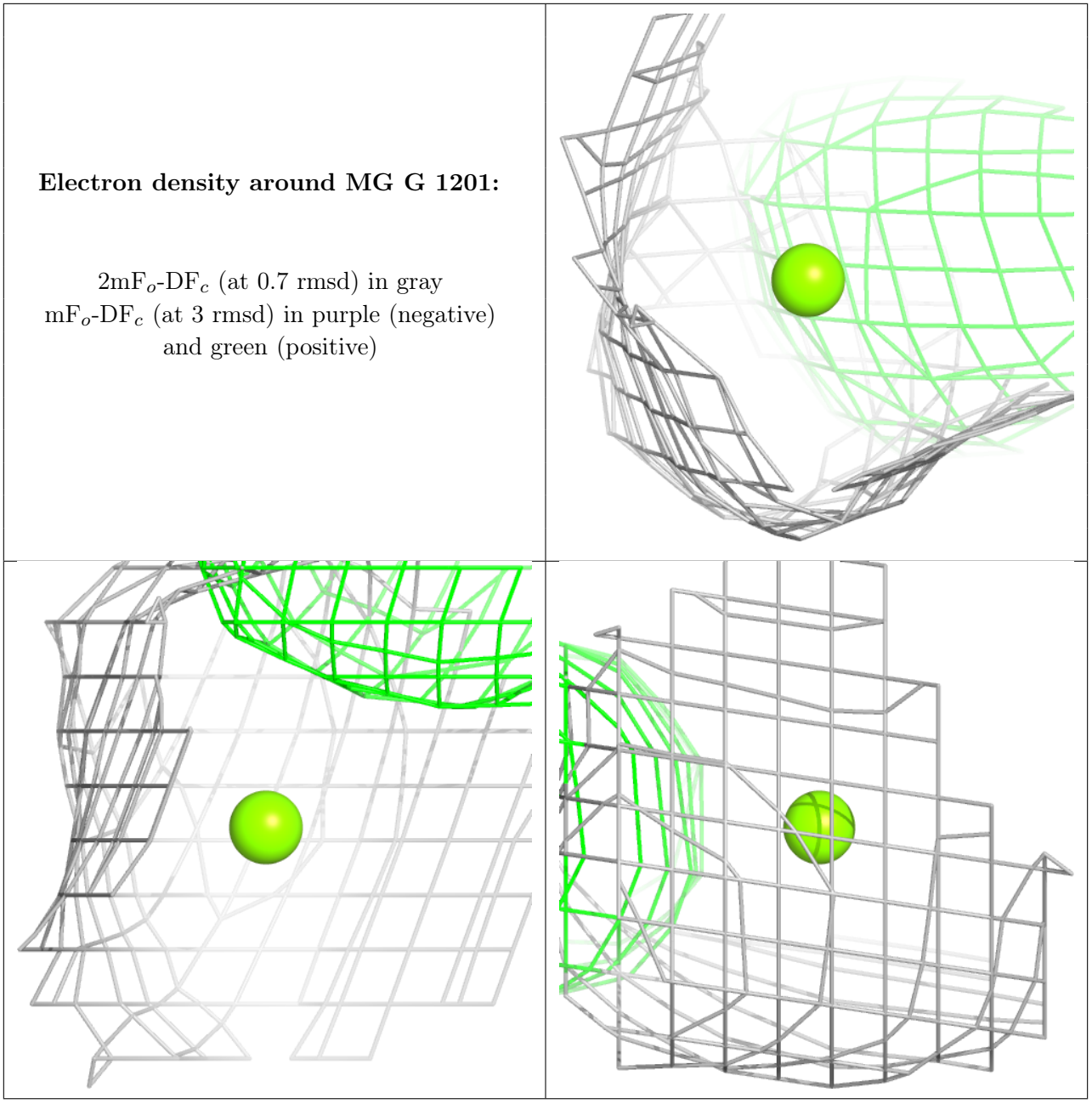
Electron density around MG F 1206:

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



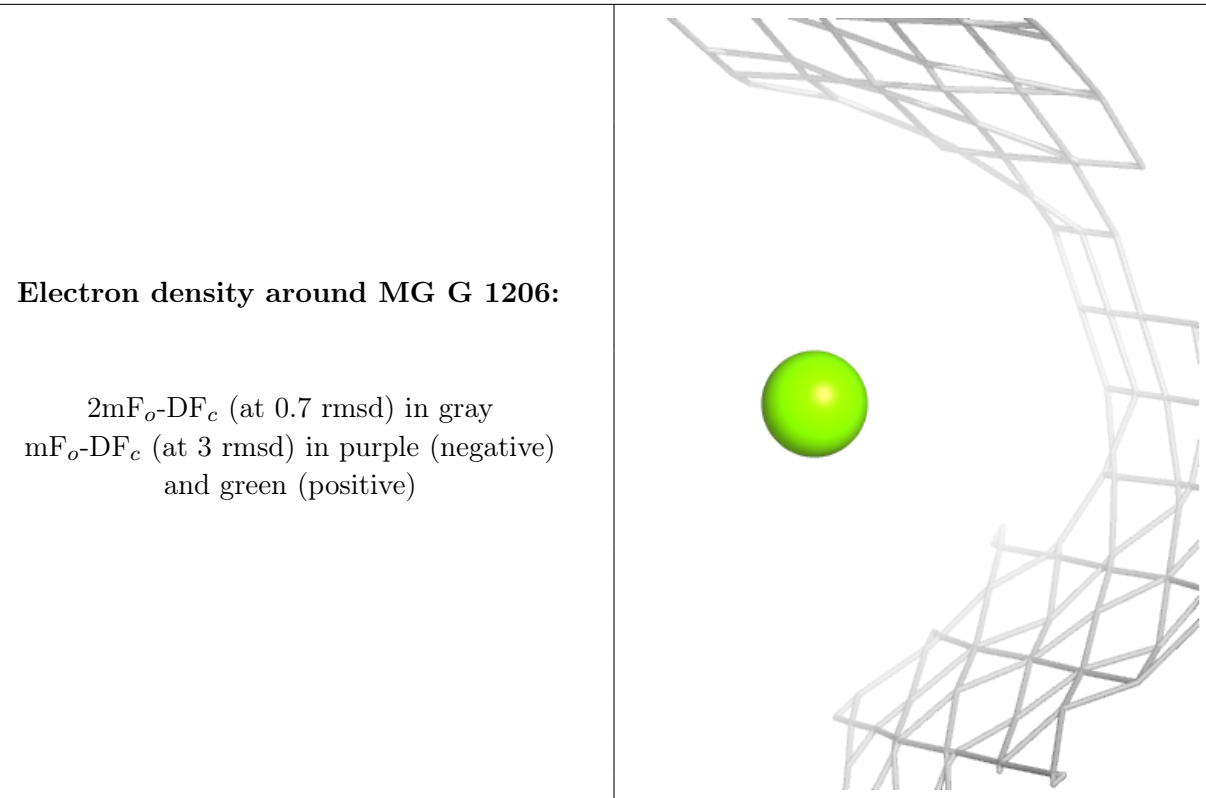
Electron density around MG G 1201:

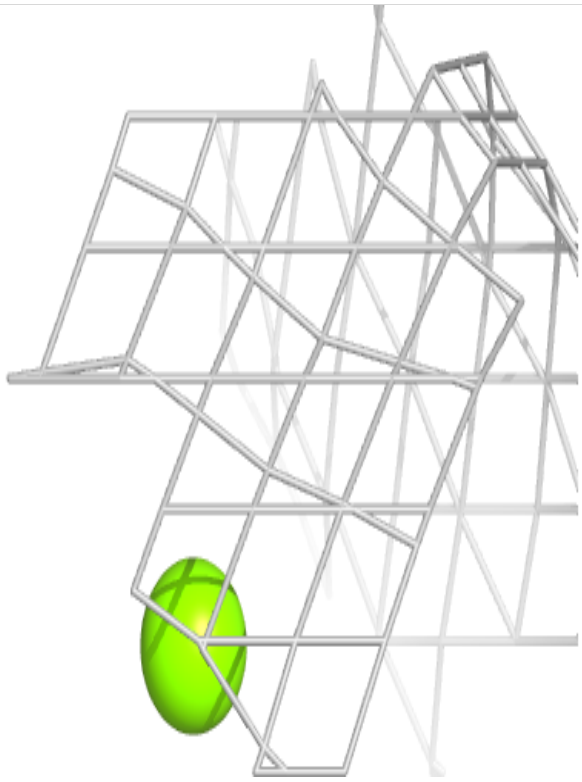
$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

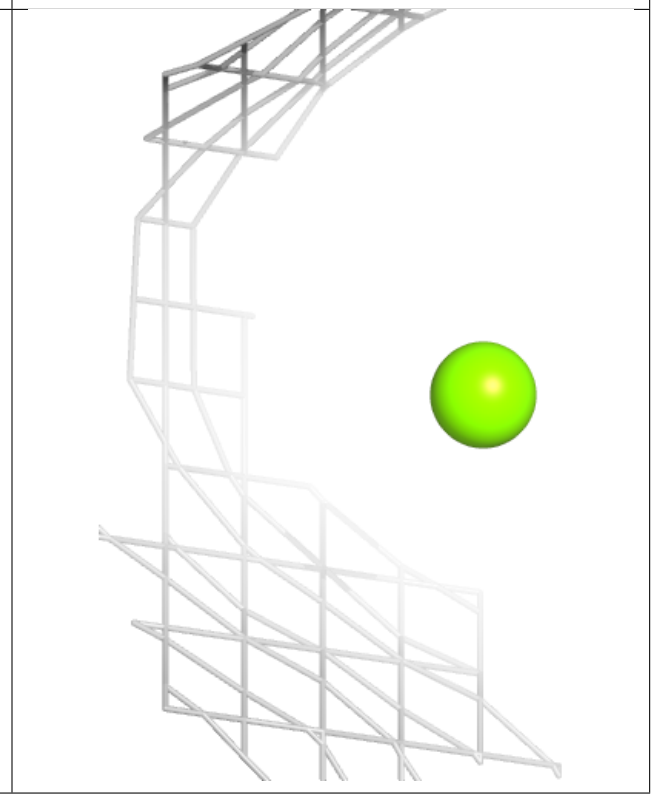


Electron density around MG G 1206:

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

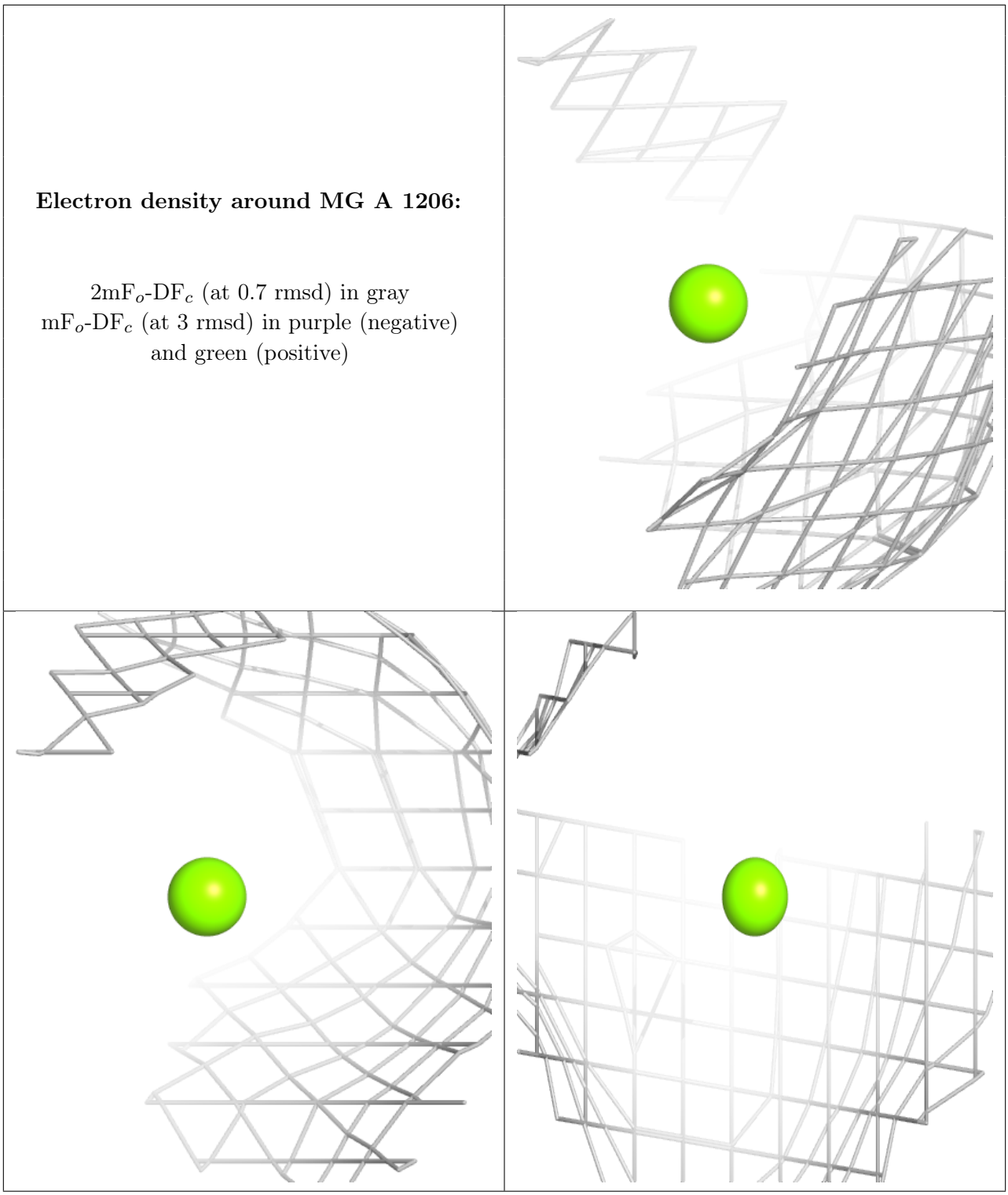






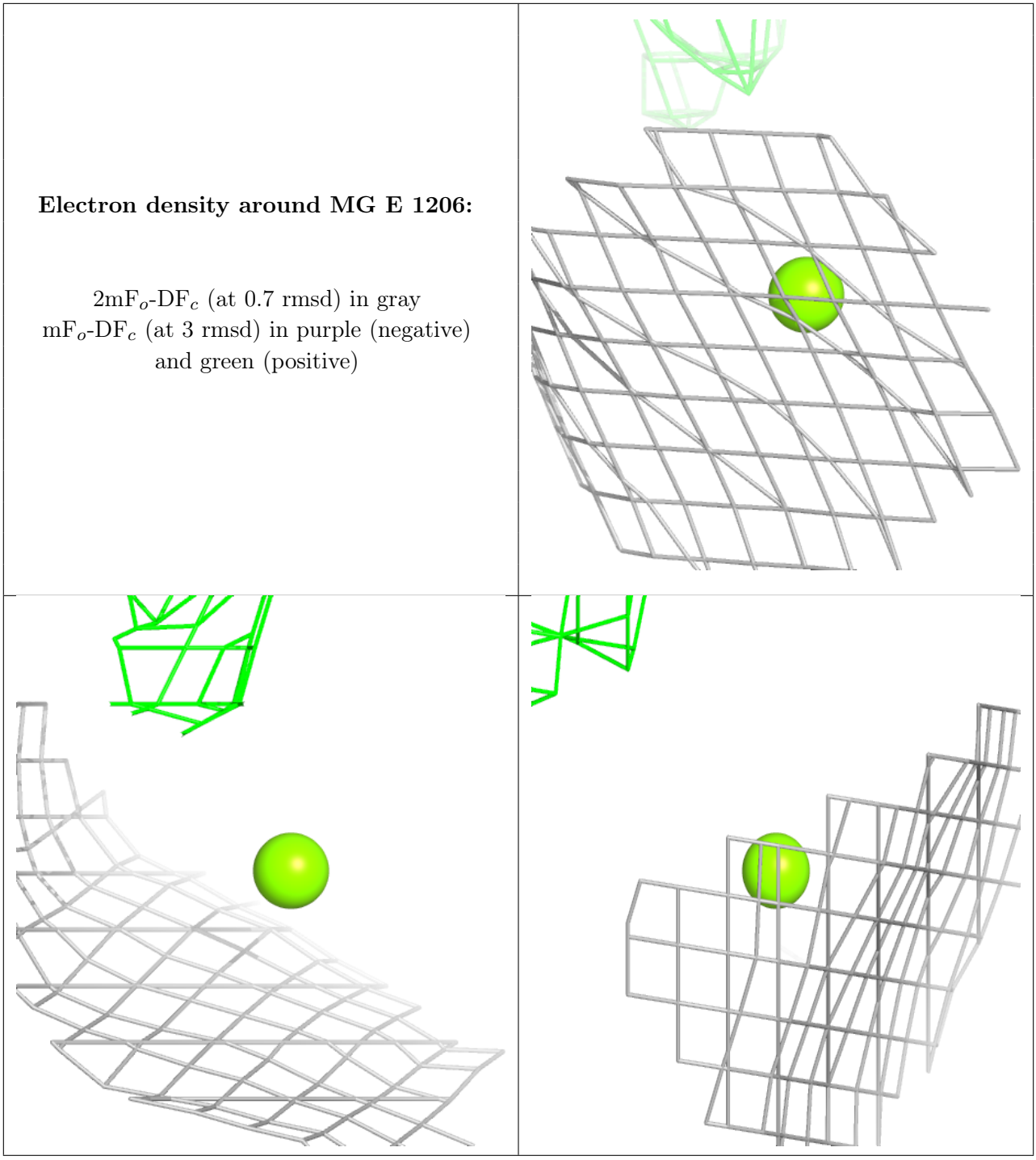
Electron density around MG A 1206:

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



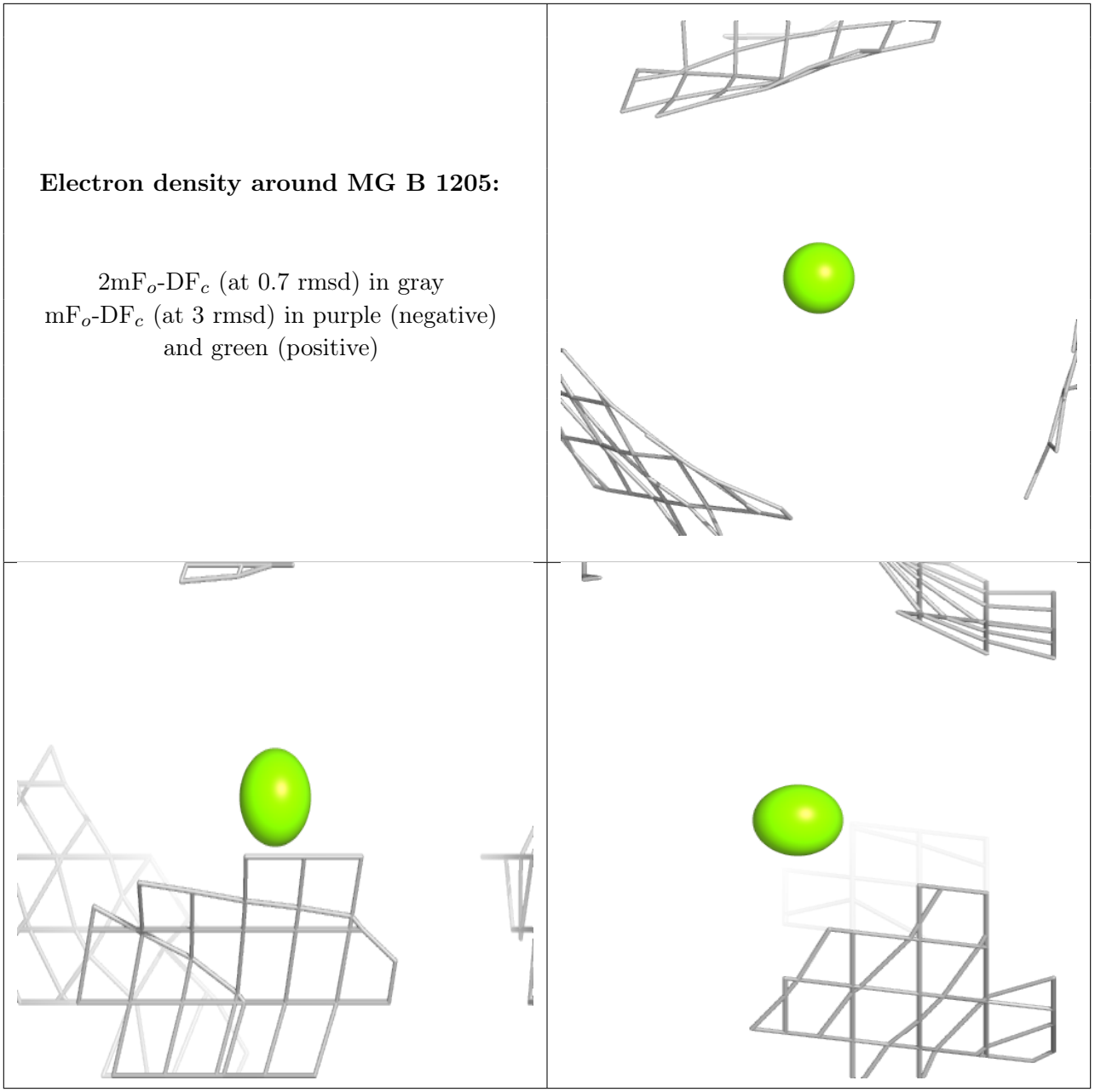
Electron density around MG E 1206:

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



Electron density around MG B 1205:

$2mF_o$-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.