



Full wwPDB X-ray Structure Validation Report ⓘ

Oct 8, 2026 – 10:14 AM EDT

PDB ID : 14CT / pdb_000014ct
Title : Structure of liver pyruvate kinase in complex with allosteric activator 8f
Authors : Lulla, A.; Rodriguez Rivero, A.; Grotli, M.; Hyvonen, M.
Deposited on : 2026-04-28
Resolution : 2.48 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 Phenix2.2
Mogul : 2022.3.0, CSD as543be (2022)
Xtriage (Phenix) : 2.2
EDS : 3.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4 : 9.0.015 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.51

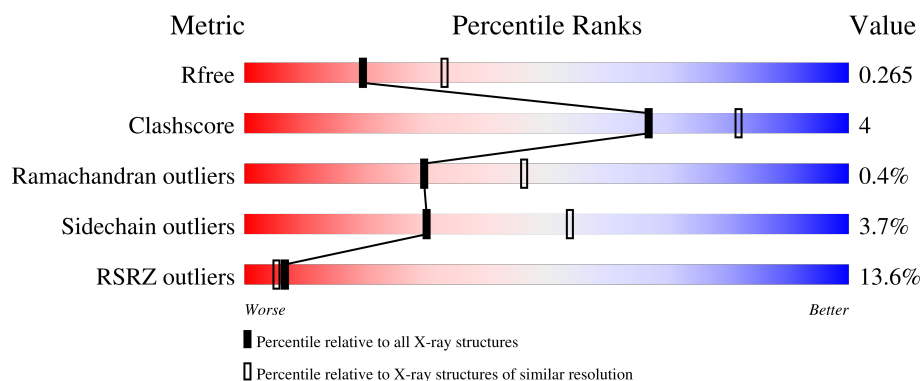
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.48 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}	180053	7589 (2.50-2.46)
Clashscore	190562	8295 (2.50-2.46)
Ramachandran outliers	187476	8164 (2.50-2.46)
Sidechain outliers	187428	8166 (2.50-2.46)
RSRZ outliers	180081	7593 (2.50-2.46)

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

Mol	Chain	Length	Quality of chain
1	A	447	
1	B	447	
1	C	447	
1	D	447	
1	E	447	

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Mol	Chain	Length	Quality of chain
1	F	447	
1	G	447	
1	H	447	

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	OXL	A	602	-	X	-	-
3	OXL	B	602	-	X	-	-
3	OXL	C	602	-	X	-	-
3	OXL	D	602	-	X	-	-
3	OXL	E	602	-	X	-	-
3	OXL	G	602	-	X	-	-
3	OXL	H	602	-	X	-	-

2 Entry composition

There are 7 unique types of molecules in this entry. The entry contains 27213 atoms, of which 56 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 Isoform L-type of Pyruvate kinase PKLR.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	418	Total	C	N	O	S	0	12	0
			3232	2029	581	602	20			
1	B	436	Total	C	N	O	S	3	8	0
			3350	2104	604	622	20			
1	C	424	Total	C	N	O	S	0	9	0
			3268	2058	584	607	19			
1	D	424	Total	C	N	O	S	0	8	0
			3254	2043	589	603	19			
1	E	420	Total	C	N	O	S	0	12	0
			3255	2047	585	603	20			
1	F	432	Total	C	N	O	S	0	8	0
			3324	2092	597	615	20			
1	G	422	Total	C	N	O	S	0	10	0
			3256	2049	584	604	19			
1	H	425	Total	C	N	O	S	0	9	0
			3269	2053	593	604	19			

There are 48 discrepancies between the modelled and reference sequences:

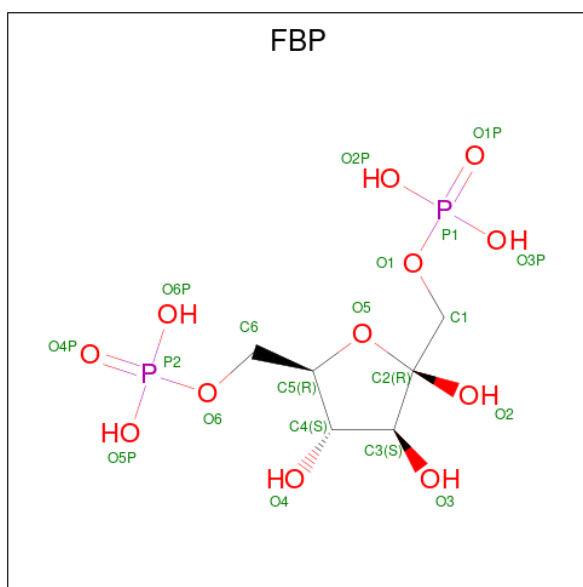
Chain	Residue	Modelled	Actual	Comment	Reference
A	-1	GLY	-	expression tag	UNP P30613
A	0	SER	-	expression tag	UNP P30613
A	12	ASP	SER	conflict	UNP P30613
A	130	GLY	-	linker	UNP P30613
A	131	SER	-	linker	UNP P30613
A	132	GLY	-	linker	UNP P30613
B	-1	GLY	-	expression tag	UNP P30613
B	0	SER	-	expression tag	UNP P30613
B	12	ASP	SER	conflict	UNP P30613
B	130	GLY	-	linker	UNP P30613
B	131	SER	-	linker	UNP P30613
B	132	GLY	-	linker	UNP P30613
C	-1	GLY	-	expression tag	UNP P30613

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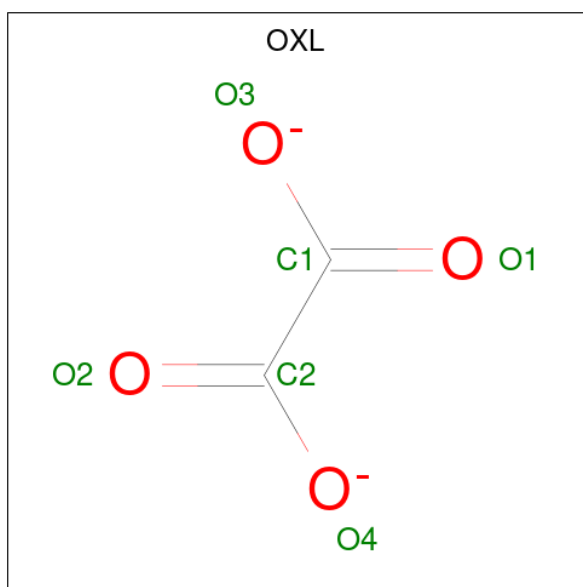
Chain	Residue	Modelled	Actual	Comment	Reference
C	0	SER	-	expression tag	UNP P30613
C	12	ASP	SER	conflict	UNP P30613
C	130	GLY	-	linker	UNP P30613
C	131	SER	-	linker	UNP P30613
C	132	GLY	-	linker	UNP P30613
D	-1	GLY	-	expression tag	UNP P30613
D	0	SER	-	expression tag	UNP P30613
D	12	ASP	SER	conflict	UNP P30613
D	130	GLY	-	linker	UNP P30613
D	131	SER	-	linker	UNP P30613
D	132	GLY	-	linker	UNP P30613
E	-1	GLY	-	expression tag	UNP P30613
E	0	SER	-	expression tag	UNP P30613
E	12	ASP	SER	conflict	UNP P30613
E	130	GLY	-	linker	UNP P30613
E	131	SER	-	linker	UNP P30613
E	132	GLY	-	linker	UNP P30613
F	-1	GLY	-	expression tag	UNP P30613
F	0	SER	-	expression tag	UNP P30613
F	12	ASP	SER	conflict	UNP P30613
F	130	GLY	-	linker	UNP P30613
F	131	SER	-	linker	UNP P30613
F	132	GLY	-	linker	UNP P30613
G	-1	GLY	-	expression tag	UNP P30613
G	0	SER	-	expression tag	UNP P30613
G	12	ASP	SER	conflict	UNP P30613
G	130	GLY	-	linker	UNP P30613
G	131	SER	-	linker	UNP P30613
G	132	GLY	-	linker	UNP P30613
H	-1	GLY	-	expression tag	UNP P30613
H	0	SER	-	expression tag	UNP P30613
H	12	ASP	SER	conflict	UNP P30613
H	130	GLY	-	linker	UNP P30613
H	131	SER	-	linker	UNP P30613
H	132	GLY	-	linker	UNP P30613

- Molecule 2 is 1,6-di-O-phosphono-beta-D-fructofuranose (CCD ID: FBP) (formula: $C_6H_{14}O_{12}P_2$).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total	C	O	P	0	0
			20	6	12	2		
2	B	1	Total	C	O	P	0	0
			20	6	12	2		
2	C	1	Total	C	O	P	0	0
			20	6	12	2		
2	D	1	Total	C	O	P	0	0
			20	6	12	2		
2	E	1	Total	C	O	P	0	0
			20	6	12	2		
2	F	1	Total	C	O	P	0	0
			20	6	12	2		
2	G	1	Total	C	O	P	0	0
			20	6	12	2		
2	H	1	Total	C	O	P	0	0
			20	6	12	2		

- Molecule 3 is OXALATE ION (CCD ID: OXL) (formula: C_2O_4).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total	C	O	0	0
			6	2	4		
3	B	1	Total	C	O	0	0
			6	2	4		
3	C	1	Total	C	O	0	0
			6	2	4		
3	D	1	Total	C	O	0	0
			6	2	4		
3	E	1	Total	C	O	0	0
			6	2	4		
3	F	1	Total	C	O	0	0
			6	2	4		
3	G	1	Total	C	O	0	0
			6	2	4		
3	H	1	Total	C	O	0	0
			6	2	4		

- Molecule 4 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	1	Total	Mg	0	0
			1	1		
4	B	1	Total	Mg	0	0
			1	1		
4	C	1	Total	Mg	0	0
			1	1		
4	D	1	Total	Mg	0	0
			1	1		

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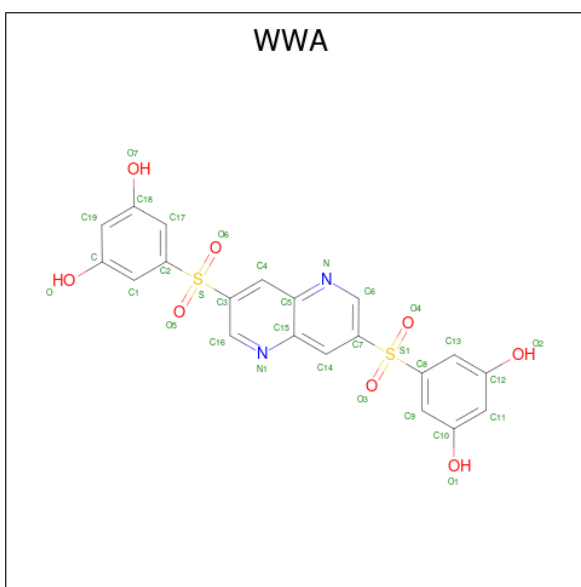
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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	E	1	Total 1	Mg 1	0	0
4	F	1	Total 1	Mg 1	0	0
4	G	1	Total 1	Mg 1	0	0
4	H	1	Total 1	Mg 1	0	0

- Molecule 5 is POTASSIUM ION (CCD ID: K) (formula: K).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
5	A	1	Total 1	K 1	0	0
5	B	1	Total 1	K 1	0	0
5	C	1	Total 1	K 1	0	0
5	D	1	Total 1	K 1	0	0
5	E	1	Total 1	K 1	0	0
5	F	1	Total 1	K 1	0	0
5	G	1	Total 1	K 1	0	0
5	H	1	Total 1	K 1	0	0

- Molecule 6 is 5,5'-(1,5-naphthyridine-3,7-diyl)disulfonyl)di(benzene-1,3-diol) (CCD ID: WWA) (formula: C₂₀H₁₄N₂O₈S₂) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms						ZeroOcc	AltConf
6	B	1	Total 46	C 20	H 14	N 2	O 8	S 2	14	0
6	C	1	Total 46	C 20	H 14	N 2	O 8	S 2	14	0
6	F	1	Total 46	C 20	H 14	N 2	O 8	S 2	14	0
6	G	1	Total 46	C 20	H 14	N 2	O 8	S 2	14	0

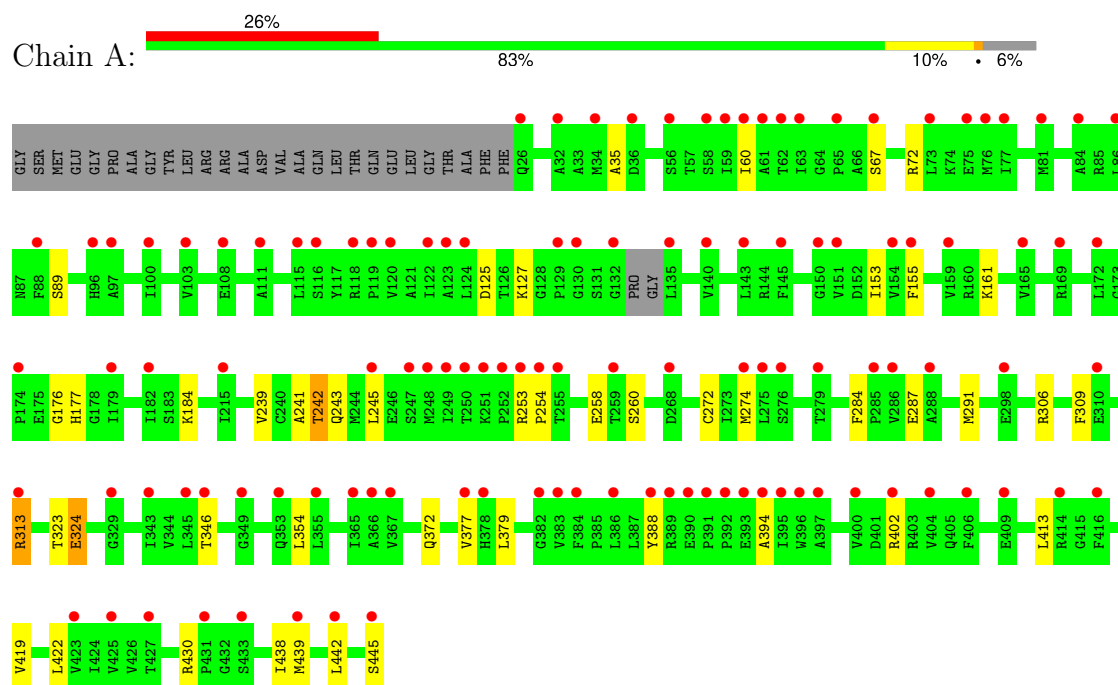
- Molecule 7 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	A	39	Total	O	0	0
			39	39		
7	B	86	Total	O	0	0
			86	86		
7	C	61	Total	O	0	0
			61	61		
7	D	97	Total	O	0	0
			97	97		
7	E	36	Total	O	0	0
			36	36		
7	F	77	Total	O	0	0
			77	77		
7	G	71	Total	O	0	0
			71	71		
7	H	130	Total	O	0	0
			130	130		

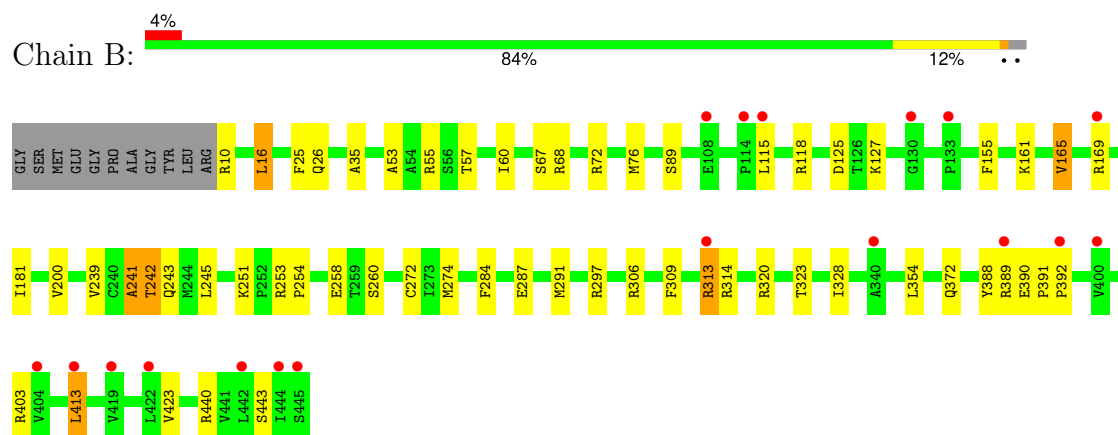
3 Residue-property plots [i](#)

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: Isoform L-type of Pyruvate kinase PKLR

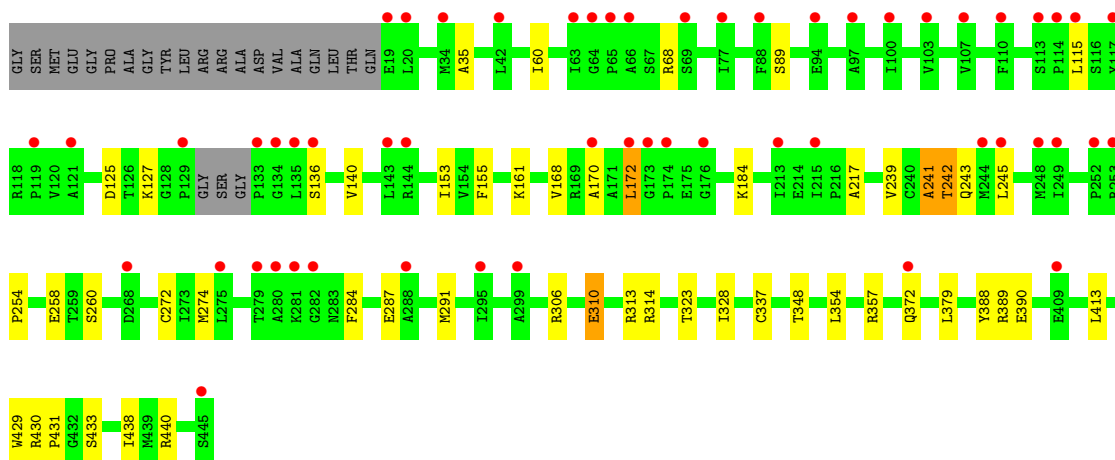


- Molecule 1: Isoform L-type of Pyruvate kinase PKLR



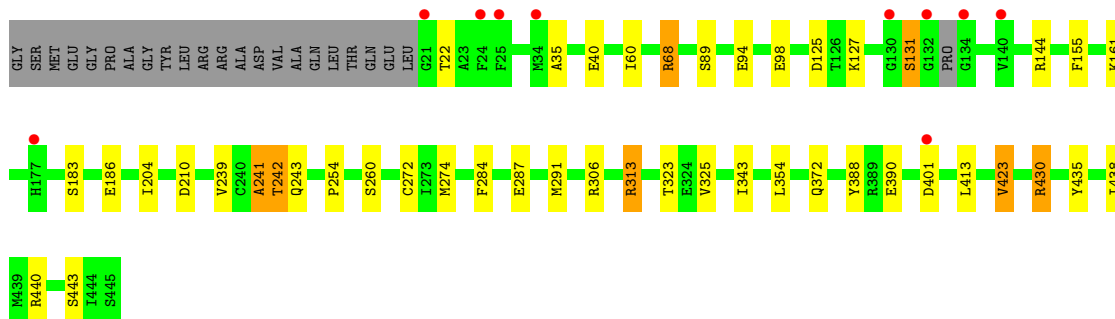
- Molecule 1: Isoform L-type of Pyruvate kinase PKLR

Chain C: 



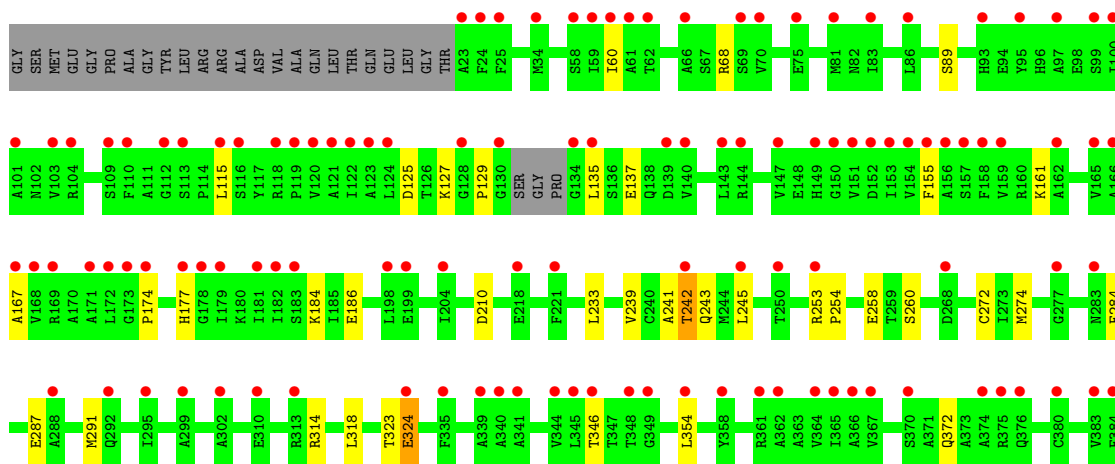
• Molecule 1: Isoform L-type of Pyruvate kinase PKLR

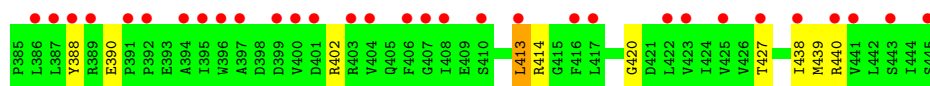
Chain D: 



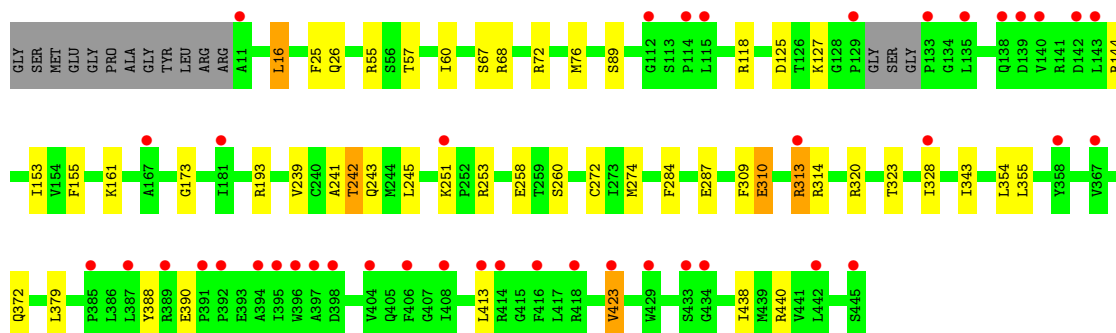
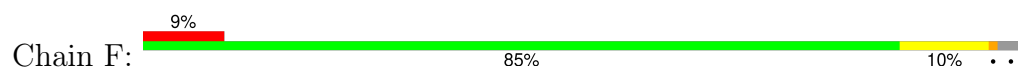
• Molecule 1: Isoform L-type of Pyruvate kinase PKLR

Chain E: 

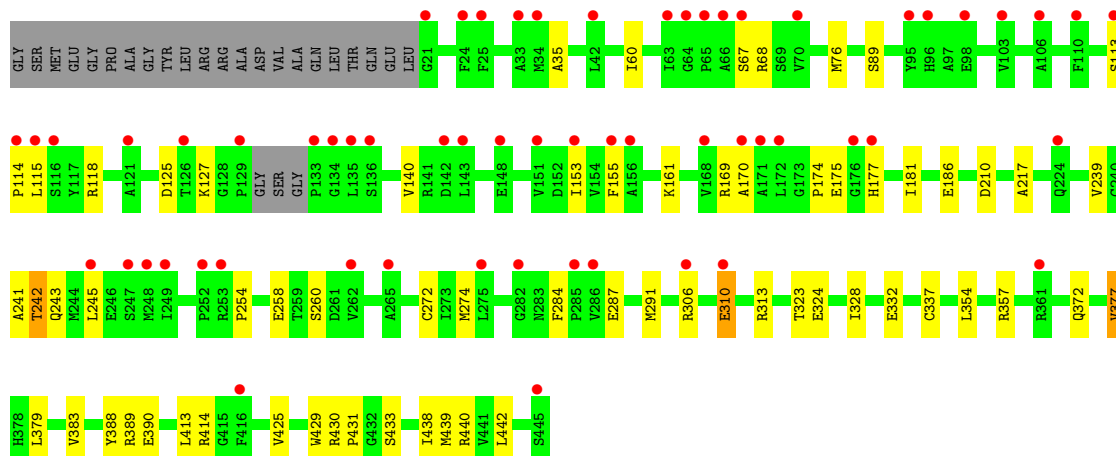
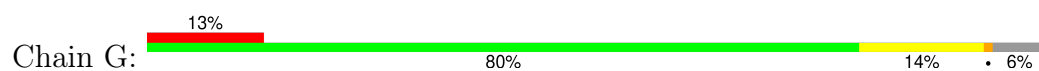




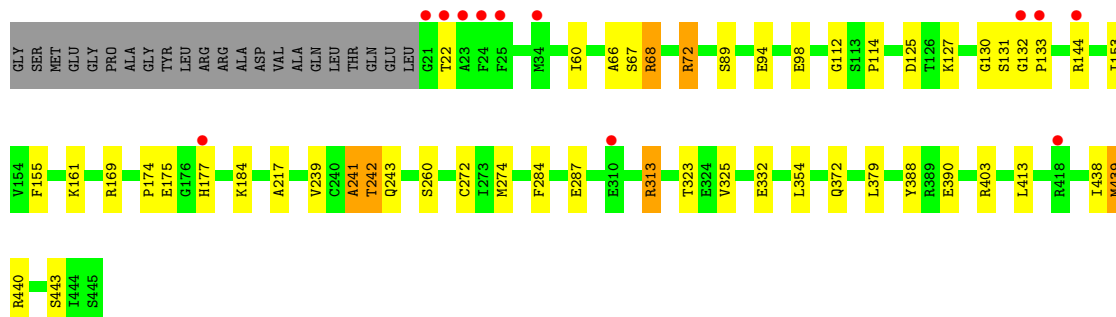
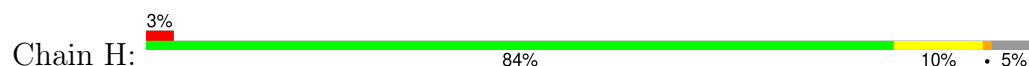
- Molecule 1: Isoform L-type of Pyruvate kinase PKLR



- Molecule 1: Isoform L-type of Pyruvate kinase PKLR



- Molecule 1: Isoform L-type of Pyruvate kinase PKLR



4 Data and refinement statistics

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α , β , γ	205.76Å 112.90Å 185.80Å 90.00° 93.41° 90.00°	Depositor
Resolution (Å)	102.70 – 2.48 102.70 – 2.48	Depositor EDS
% Data completeness (in resolution range)	69.0 (102.70-2.48) 69.0 (102.70-2.48)	Depositor EDS
R_{merge}	0.19	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.78 (at 2.48Å)	Xtrriage
Refinement program	BUSTER 2.10.4	Depositor
R, R_{free}	0.255 , 0.281 0.240 , 0.265	Depositor DCC
R_{free} test set	5170 reflections (4.95%)	wwPDB-VP
Wilson B-factor (Å ²)	49.8	Xtrriage
Anisotropy	0.020	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 50.5	EDS
L-test for twinning ²	$\langle L \rangle = 0.45$, $\langle L^2 \rangle = 0.28$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	27213	wwPDB-VP
Average B, all atoms (Å ²)	61.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 89.57 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 3.2404e-08. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: K, WWA, MG, FBP, OXL

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	0.61	0/3319	1.01	4/4484 (0.1%)
1	B	0.68	0/3429	1.03	4/4636 (0.1%)
1	C	0.63	0/3349	1.01	3/4527 (0.1%)
1	D	0.68	0/3332	1.03	2/4502 (0.0%)
1	E	0.61	0/3345	1.01	2/4519 (0.0%)
1	F	0.66	0/3402	1.02	4/4599 (0.1%)
1	G	0.65	0/3341	1.03	4/4516 (0.1%)
1	H	0.69	0/3351	1.03	2/4527 (0.0%)
All	All	0.65	0/26868	1.02	25/36310 (0.1%)

There are no bond length outliers.

All (25) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	G	114	PRO	CA-C-N	7.01	130.25	120.29
1	G	114	PRO	C-N-CA	7.01	130.25	120.29
1	D	241	ALA	CA-C-N	5.53	132.09	121.54
1	D	241	ALA	C-N-CA	5.53	132.09	121.54
1	B	241	ALA	CA-C-N	5.45	131.94	121.54
1	B	241	ALA	C-N-CA	5.45	131.94	121.54
1	G	241	ALA	CA-C-N	5.28	131.63	121.54
1	G	241	ALA	C-N-CA	5.28	131.63	121.54
1	F	241	ALA	CA-C-N	5.26	131.59	121.54
1	F	241	ALA	C-N-CA	5.26	131.59	121.54
1	F	355	LEU	CA-C-N	5.24	127.30	120.28
1	F	355	LEU	C-N-CA	5.24	127.30	120.28
1	A	241	ALA	CA-C-N	5.19	131.44	121.54
1	A	241	ALA	C-N-CA	5.19	131.44	121.54
1	C	310	GLU	CB-CG-CD	5.18	121.41	112.60
1	E	241	ALA	CA-C-N	5.18	131.44	121.54

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	241	ALA	C-N-CA	5.18	131.44	121.54
1	B	115	LEU	CA-C-N	5.16	129.97	122.08
1	B	115	LEU	C-N-CA	5.16	129.97	122.08
1	C	241	ALA	CA-C-N	5.11	131.30	121.54
1	C	241	ALA	C-N-CA	5.11	131.30	121.54
1	A	176	GLY	CA-C-N	5.08	127.08	120.28
1	A	176	GLY	C-N-CA	5.08	127.08	120.28
1	H	241	ALA	CA-C-N	5.06	131.21	121.54
1	H	241	ALA	C-N-CA	5.06	131.21	121.54

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3232	0	3307	22	0
1	B	3350	0	3417	27	1
1	C	3268	0	3336	30	0
1	D	3254	0	3313	24	0
1	E	3255	0	3320	25	0
1	F	3324	0	3398	26	0
1	G	3256	0	3320	38	0
1	H	3269	0	3334	29	0
2	A	20	0	10	1	0
2	B	20	0	10	1	0
2	C	20	0	10	0	0
2	D	20	0	10	0	0
2	E	20	0	10	1	0
2	F	20	0	10	0	0
2	G	20	0	10	0	0
2	H	20	0	10	1	0
3	A	6	0	0	0	0
3	B	6	0	0	0	0
3	C	6	0	0	0	0
3	D	6	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	E	6	0	0	0	0
3	F	6	0	0	0	0
3	G	6	0	0	0	0
3	H	6	0	0	0	0
4	A	1	0	0	0	0
4	B	1	0	0	0	0
4	C	1	0	0	0	0
4	D	1	0	0	0	0
4	E	1	0	0	0	0
4	F	1	0	0	0	0
4	G	1	0	0	0	0
4	H	1	0	0	0	0
5	A	1	0	0	0	0
5	B	1	0	0	0	0
5	C	1	0	0	0	0
5	D	1	0	0	0	0
5	E	1	0	0	0	0
5	F	1	0	0	0	0
5	G	1	0	0	0	0
5	H	1	0	0	0	0
6	B	32	14	0	0	0
6	C	32	14	0	0	0
6	F	32	14	0	0	0
6	G	32	14	0	0	0
7	A	39	0	0	0	0
7	B	86	0	0	0	0
7	C	61	0	0	0	0
7	D	97	0	0	0	0
7	E	36	0	0	0	0
7	F	77	0	0	0	0
7	G	71	0	0	0	0
7	H	130	0	0	0	0
All	All	27157	56	26825	197	1

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 4.

All (197) 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:E:115:LEU:HG	1:E:413:LEU:HB3	1.66	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:419:VAL:HG13	1:A:445:SER:HB3	1.72	0.72
1:G:310:GLU:HG3	1:G:313:ARG:HH22	1.59	0.67
1:G:118:ARG:HH11	1:G:414:ARG:HH12	1.41	0.66
1:G:118:ARG:NH1	1:G:414:ARG:HH12	1.92	0.66
1:B:89:SER:HA	1:B:127:LYS:HG3	1.78	0.66
1:G:439:MET:HE3	1:H:439:MET:HG2	1.76	0.65
1:F:89:SER:HA	1:F:127:LYS:HG3	1.79	0.64
1:G:118:ARG:HH11	1:G:414:ARG:NH1	1.97	0.63
1:C:431:PRO:HB2	1:G:140:VAL:HG11	1.80	0.62
1:H:89:SER:HA	1:H:127:LYS:HG3	1.82	0.62
1:C:313:ARG:HG3	1:C:328:ILE:HD11	1.81	0.61
1:E:115:LEU:HD12	1:E:414:ARG:HE	1.65	0.61
1:D:89:SER:HA	1:D:127:LYS:HG3	1.82	0.61
1:C:438:ILE:HG12	1:D:440:ARG:HG3	1.82	0.61
1:G:313:ARG:NH2	1:H:313:ARG:HE	1.99	0.60
1:E:89:SER:HA	1:E:127:LYS:HG3	1.81	0.60
1:C:89:SER:HA	1:C:127:LYS:HG3	1.82	0.60
1:C:323:THR:HG22	1:C:354:LEU:HD12	1.83	0.60
1:F:239:VAL:HG22	1:F:272:CYS:HB2	1.84	0.59
1:A:89:SER:HA	1:A:127:LYS:HG3	1.85	0.59
1:G:89:SER:HA	1:G:127:LYS:HG3	1.85	0.58
1:G:323:THR:HG22	1:G:354:LEU:HD12	1.86	0.58
1:F:253:ARG:HH21	1:H:217:ALA:HB2	1.69	0.57
1:D:323:THR:HG22	1:D:354:LEU:HD12	1.87	0.57
1:E:115:LEU:HG	1:E:413:LEU:CB	2.35	0.57
1:A:60:ILE:HB	1:A:274:MET:HG3	1.87	0.56
1:B:16:LEU:HD23	1:B:25:PHE:HZ	1.69	0.56
1:F:67:SER:HA	1:F:72:ARG:HG2	1.87	0.56
1:F:313:ARG:HG3	1:F:328:ILE:HD11	1.88	0.56
1:C:140:VAL:HG11	1:G:431:PRO:HB2	1.87	0.55
1:H:66:ALA:O	1:H:72:ARG:HD2	2.06	0.55
1:A:67:SER:HA	1:A:72:ARG:HG2	1.89	0.55
1:G:60:ILE:HB	1:G:274:MET:HG3	1.88	0.55
1:A:309:PHE:HE2	1:A:313:ARG:HH12	1.55	0.54
1:C:433:SER:O	1:G:170:ALA:HB1	2.07	0.54
1:D:239:VAL:HG22	1:D:272:CYS:HB2	1.89	0.54
1:D:430:ARG:HD2	1:D:435:TYR:CD2	2.42	0.54
1:H:67:SER:HA	1:H:72:ARG:HG2	1.89	0.54
1:A:323:THR:HG22	1:A:354:LEU:HD12	1.88	0.54
1:H:132:GLY:C	1:H:133:PRO:N	2.66	0.54
1:C:60:ILE:HB	1:C:274:MET:HG3	1.88	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:239:VAL:HG22	1:B:272:CYS:HB2	1.90	0.53
1:C:284:PHE:HB3	1:C:287:GLU:HB2	1.90	0.53
1:D:60:ILE:HB	1:D:274:MET:HG3	1.89	0.53
1:A:239:VAL:HG22	1:A:272:CYS:HB2	1.90	0.53
1:E:284:PHE:HB3	1:E:287:GLU:HB2	1.90	0.53
1:E:323:THR:HG22	1:E:354:LEU:HD12	1.90	0.53
1:H:60:ILE:HB	1:H:274:MET:HG3	1.91	0.53
1:A:309:PHE:CE2	1:A:313:ARG:NH1	2.76	0.53
1:D:284:PHE:HB3	1:D:287:GLU:HB2	1.90	0.53
1:E:253:ARG:HH21	1:G:217:ALA:HB2	1.74	0.53
1:G:313:ARG:HG3	1:G:328:ILE:HD11	1.90	0.53
1:H:323:THR:HG22	1:H:354:LEU:HD12	1.91	0.53
1:F:16:LEU:HD23	1:F:25:PHE:HZ	1.73	0.52
1:B:284:PHE:HB3	1:B:287:GLU:HB2	1.91	0.52
1:C:440:ARG:HG3	1:D:438:ILE:HG12	1.90	0.52
1:H:68:ARG:NH2	1:H:98:GLU:HB2	2.23	0.52
1:G:242:THR:HG22	1:G:243:GLN:HG3	1.92	0.52
1:H:284:PHE:HB3	1:H:287:GLU:HB2	1.92	0.52
1:E:239:VAL:HG22	1:E:272:CYS:HB2	1.92	0.51
1:D:242:THR:HG22	1:D:243:GLN:HG3	1.93	0.51
1:E:60:ILE:HB	1:E:274:MET:HG3	1.91	0.51
1:B:309:PHE:CE2	1:B:313:ARG:NH1	2.77	0.51
1:A:388:TYR:OH	1:A:402:ARG:HG3	2.11	0.51
1:B:313:ARG:HG3	1:B:328:ILE:HD11	1.93	0.50
1:A:438:ILE:HG12	1:B:440:ARG:HG3	1.93	0.50
1:D:68:ARG:NH2	1:D:98:GLU:HB2	2.27	0.50
1:B:323:THR:HG22	1:B:354:LEU:HD12	1.94	0.50
1:G:254:PRO:HG3	1:G:291:MET:HG2	1.93	0.50
1:A:284:PHE:HB3	1:A:287:GLU:HB2	1.94	0.50
1:F:323:THR:HG22	1:F:354:LEU:HD12	1.94	0.49
1:E:242:THR:HG22	1:E:243:GLN:HG3	1.94	0.49
1:F:60:ILE:HB	1:F:274:MET:HG3	1.94	0.49
1:C:170:ALA:HB1	1:G:433:SER:O	2.12	0.49
1:D:388:TYR:CE2	1:D:390:GLU:HB2	2.48	0.48
1:C:310:GLU:HG2	1:C:313:ARG:HH22	1.79	0.48
1:H:313:ARG:HB2	1:H:313:ARG:HH21	1.79	0.48
1:F:309:PHE:CE2	1:F:313:ARG:NH1	2.82	0.48
1:G:388:TYR:CZ	1:G:390:GLU:HB2	2.49	0.48
1:B:60:ILE:HB	1:B:274:MET:HG3	1.96	0.48
1:C:388:TYR:CZ	1:C:390:GLU:HB2	2.49	0.48
1:A:242:THR:HG22	1:A:243:GLN:HG3	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:309:PHE:HE2	1:B:313:ARG:HH12	1.56	0.47
1:C:168:VAL:O	1:C:172[B]:LEU:HG	2.14	0.47
1:F:242:THR:HG22	1:F:243:GLN:HG3	1.96	0.47
1:F:284:PHE:HB3	1:F:287:GLU:HB2	1.95	0.47
1:D:388:TYR:CZ	1:D:390:GLU:HB2	2.50	0.47
1:B:388:TYR:CZ	1:B:390:GLU:HB2	2.50	0.47
1:C:153:ILE:HG12	1:C:379:LEU:HD11	1.96	0.47
1:F:388:TYR:CE2	1:F:390:GLU:HB2	2.51	0.46
1:G:245:LEU:HD23	1:G:258:GLU:HB3	1.97	0.46
1:H:242:THR:HG22	1:H:243:GLN:HG3	1.96	0.46
1:B:242:THR:HG22	1:B:243:GLN:HG3	1.96	0.46
1:G:125:ASP:HA	1:G:155:PHE:HB2	1.97	0.46
1:C:239:VAL:HG22	1:C:272:CYS:HB2	1.96	0.46
1:G:239:VAL:HG22	1:G:272:CYS:HB2	1.97	0.46
1:G:284:PHE:HB3	1:G:287:GLU:HB2	1.96	0.46
1:G:440:ARG:HG3	1:H:438:ILE:HG12	1.96	0.46
1:C:125:ASP:HA	1:C:155:PHE:HB2	1.97	0.46
1:A:422:LEU:HD12	1:B:320:ARG:HD2	1.97	0.46
1:G:169:ARG:HG2	1:G:181:ILE:CD1	2.46	0.46
1:A:253:ARG:HH21	1:C:217:ALA:HB2	1.80	0.46
1:C:388:TYR:CE2	1:C:390:GLU:HB2	2.50	0.46
1:G:153:ILE:HG12	1:G:379:LEU:HD11	1.98	0.46
1:B:169[A]:ARG:HE	1:B:181:ILE:HD12	1.82	0.46
1:G:332[A]:GLU:OE1	1:H:332[A]:GLU:OE1	2.34	0.46
1:H:439:MET:O	1:H:439:MET:HG3	2.16	0.46
1:F:245:LEU:HD23	1:F:258:GLU:HB3	1.98	0.45
1:H:388:TYR:CZ	1:H:390:GLU:HB2	2.52	0.45
1:A:245:LEU:HD23	1:A:258:GLU:HB3	1.99	0.45
1:B:55:ARG:HD2	1:B:57:THR:O	2.16	0.45
1:C:35:ALA:O	1:C:306:ARG:HD2	2.16	0.45
1:A:125:ASP:HA	1:A:155:PHE:HB2	1.99	0.45
1:F:309:PHE:HE2	1:F:313:ARG:HH12	1.60	0.45
1:F:388:TYR:CZ	1:F:390:GLU:HB2	2.51	0.45
1:E:388:TYR:CZ	1:E:390:GLU:HB2	2.52	0.45
1:B:245:LEU:HD23	1:B:258:GLU:HB3	1.99	0.45
1:D:125:ASP:HA	1:D:155:PHE:HB2	1.97	0.45
1:A:254:PRO:HG3	1:A:291:MET:HG2	1.98	0.44
1:G:337:CYS:HB3	1:H:325:VAL:HG21	1.98	0.44
1:A:155:PHE:HB3	1:A:184:LYS:HD2	1.99	0.44
1:C:254:PRO:HG3	1:C:291:MET:HG2	1.99	0.44
1:D:35:ALA:HB1	1:D:40:GLU:HB3	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:425:VAL:HG21	1:G:442[A]:LEU:HD12	1.99	0.44
1:E:438:ILE:HG12	1:F:440:ARG:HG3	1.99	0.44
1:H:125:ASP:HA	1:H:155:PHE:HB2	1.99	0.44
1:H:153:ILE:HG12	1:H:379:LEU:HD11	1.99	0.44
1:E:125:ASP:HA	1:E:155:PHE:HB2	1.98	0.44
1:E:155:PHE:HB3	1:E:184:LYS:HD2	2.00	0.44
1:F:310:GLU:HG3	1:F:313:ARG:HH21	1.83	0.44
1:D:94:GLU:O	1:D:98:GLU:HG3	2.18	0.44
1:E:245:LEU:HD23	1:E:258:GLU:HB3	2.00	0.44
1:C:242:THR:HG22	1:C:243:GLN:HG3	2.00	0.44
1:C:348:THR:HG22	1:G:174:PRO:HD3	2.00	0.44
1:H:239:VAL:HG22	1:H:272:CYS:HB2	2.00	0.43
1:F:55:ARG:HD2	1:F:57:THR:O	2.19	0.43
1:H:388:TYR:CE2	1:H:390:GLU:HB2	2.52	0.43
1:G:377:VAL:CG2	1:G:383:VAL:HG11	2.48	0.43
1:B:53:ALA:O	1:B:297:ARG:NH2	2.48	0.43
1:F:343:ILE:HD12	1:F:423:VAL:HG11	2.00	0.43
1:H:241:ALA:HB1	1:H:274:MET:HE2	1.99	0.43
1:B:241:ALA:HB1	1:B:274:MET:HE2	2.00	0.43
1:G:324[A]:GLU:HG3	1:G:354:LEU:HD13	2.00	0.43
1:A:324:GLU:HG2	1:A:354:LEU:HD13	2.00	0.43
1:C:245:LEU:HD23	1:C:258:GLU:HB3	2.00	0.43
1:G:438:ILE:HG12	1:H:440[B]:ARG:HB3	2.01	0.43
1:G:354:LEU:O	1:G:357:ARG:HG2	2.19	0.43
1:B:67:SER:HB2	1:B:76[B]:MET:SD	2.59	0.43
1:E:318:LEU:HB3	1:F:16:LEU:HD22	2.00	0.42
1:E:254:PRO:HG3	1:E:291:MET:HG2	2.02	0.42
1:G:388:TYR:CE2	1:G:390:GLU:HB2	2.54	0.42
1:B:35:ALA:O	1:B:306:ARG:HD2	2.19	0.42
1:B:67:SER:HA	1:B:72:ARG:HG2	2.01	0.42
1:D:241:ALA:HB1	1:D:274:MET:HE2	2.01	0.42
1:E:440:ARG:HG3	1:F:438:ILE:HG12	2.02	0.42
1:H:94:GLU:O	1:H:98:GLU:HG3	2.18	0.42
1:B:388:TYR:CE2	1:B:390:GLU:HB2	2.54	0.42
1:G:35:ALA:O	1:G:306:ARG:HD2	2.19	0.42
1:E:186:GLU:HB3	1:E:210:ASP:HB2	2.02	0.42
1:G:429:TRP:CE2	1:G:430:ARG:HG2	2.55	0.42
1:A:346:THR:OG1	2:A:601:FBP:O4P	2.33	0.42
1:C:155:PHE:HB3	1:C:184:LYS:HD2	2.01	0.41
1:G:67:SER:HB2	1:G:76[B]:MET:SD	2.61	0.41
1:D:35:ALA:O	1:D:306:ARG:HD2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:313:ARG:HH11	1:D:313:ARG:HB2	1.86	0.41
1:E:388:TYR:CE2	1:E:390:GLU:HB2	2.55	0.41
1:F:125:ASP:HA	1:F:155:PHE:HB2	2.03	0.41
1:F:144:ARG:HH22	1:F:173:GLY:HA3	1.86	0.41
1:A:35:ALA:O	1:A:306:ARG:HD2	2.21	0.41
1:B:165:VAL:HG11	1:B:200:VAL:HG23	2.02	0.41
1:C:241:ALA:HB1	1:C:274:MET:HE2	2.02	0.41
1:E:174:PRO:HA	1:E:177[A]:HIS:ND1	2.35	0.41
1:F:67:SER:HB2	1:F:76[B]:MET:SD	2.60	0.41
1:B:391:PRO:HA	1:B:392:PRO:HD3	1.96	0.41
1:H:155:PHE:HB3	1:H:184:LYS:HD2	2.03	0.41
1:A:153:ILE:HG12	1:A:379:LEU:HD11	2.03	0.41
1:B:403:ARG:NH1	2:B:601:FBP:O3P	2.44	0.41
1:C:354:LEU:O	1:C:357:ARG:HG2	2.21	0.41
1:D:183:SER:HB2	1:D:204:ILE:HD13	2.02	0.41
1:G:186:GLU:HB3	1:G:210:ASP:HB2	2.03	0.41
1:H:174:PRO:HA	1:H:177[A]:HIS:ND1	2.36	0.41
1:D:186:GLU:HB3	1:D:210:ASP:HB2	2.03	0.41
1:E:324:GLU:HG2	1:E:354:LEU:HD13	2.03	0.41
1:E:420:GLY:O	1:F:320:ARG:NH2	2.54	0.41
1:H:403:ARG:NH1	2:H:601:FBP:O1P	2.40	0.41
1:B:254:PRO:HG3	1:B:291:MET:HG2	2.03	0.40
1:D:254:PRO:HG3	1:D:291:MET:HG2	2.03	0.40
1:C:337:CYS:HB3	1:D:325:VAL:HG21	2.02	0.40
1:C:429:TRP:CE2	1:C:430:ARG:HG2	2.56	0.40
1:F:153:ILE:HG12	1:F:379:LEU:HD11	2.04	0.40
1:E:135:LEU:HD22	1:E:167:ALA:HB1	2.04	0.40
1:C:314:ARG:NH2	1:D:306:ARG:HD3	2.36	0.40
1:D:343:ILE:HD12	1:D:423:VAL:HG11	2.03	0.40
1:H:112:GLY:O	1:H:114:PRO:HD3	2.22	0.40
1:B:125:ASP:HA	1:B:155:PHE:HB2	2.02	0.40
1:E:346:THR:OG1	2:E:601:FBP:O4P	2.35	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:413:LEU:O	1:B:413:LEU:O[2_555]	2.19	0.01

5.3 Torsion angles

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	426/447 (95%)	418 (98%)	6 (1%)	2 (0%)	24	40
1	B	442/447 (99%)	433 (98%)	8 (2%)	1 (0%)	43	61
1	C	429/447 (96%)	425 (99%)	3 (1%)	1 (0%)	43	61
1	D	428/447 (96%)	422 (99%)	4 (1%)	2 (0%)	24	40
1	E	428/447 (96%)	421 (98%)	5 (1%)	2 (0%)	24	40
1	F	436/447 (98%)	429 (98%)	6 (1%)	1 (0%)	43	61
1	G	428/447 (96%)	422 (99%)	5 (1%)	1 (0%)	43	61
1	H	430/447 (96%)	422 (98%)	5 (1%)	3 (1%)	18	32
All	All	3447/3576 (96%)	3392 (98%)	42 (1%)	13 (0%)	30	46

All (13) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	H	130	GLY
1	H	131	SER
1	D	131	SER
1	A	242	THR
1	A	394	ALA
1	C	242	THR
1	D	242	THR
1	E	242	THR
1	F	242	THR
1	G	242	THR
1	H	242	THR
1	B	242	THR
1	E	129	PRO

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	344/352 (98%)	332 (96%)	12 (4%)	32	55
1	B	353/352 (100%)	336 (95%)	17 (5%)	23	43
1	C	346/352 (98%)	336 (97%)	10 (3%)	37	62
1	D	343/352 (97%)	329 (96%)	14 (4%)	27	50
1	E	345/352 (98%)	332 (96%)	13 (4%)	29	53
1	F	351/352 (100%)	337 (96%)	14 (4%)	28	51
1	G	345/352 (98%)	332 (96%)	13 (4%)	29	53
1	H	345/352 (98%)	331 (96%)	14 (4%)	27	50
All	All	2772/2816 (98%)	2665 (96%)	107 (4%)	30	52

All (107) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	161	LYS
1	A	177	HIS
1	A	260	SER
1	A	313	ARG
1	A	324	GLU
1	A	372	GLN
1	A	377	VAL
1	A	413	LEU
1	A	430	ARG
1	A	439[A]	MET
1	A	439[B]	MET
1	A	442	LEU
1	B	10	ARG
1	B	16	LEU
1	B	26	GLN
1	B	68	ARG
1	B	118	ARG
1	B	161	LYS
1	B	165	VAL

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Mol	Chain	Res	Type
1	B	251	LYS
1	B	253	ARG
1	B	260	SER
1	B	313	ARG
1	B	314	ARG
1	B	372	GLN
1	B	389	ARG
1	B	413	LEU
1	B	423	VAL
1	B	443	SER
1	C	68	ARG
1	C	115	LEU
1	C	136	SER
1	C	161	LYS
1	C	172[A]	LEU
1	C	172[B]	LEU
1	C	260	SER
1	C	372	GLN
1	C	389	ARG
1	C	413	LEU
1	D	22	THR
1	D	68	ARG
1	D	131	SER
1	D	144[A]	ARG
1	D	144[B]	ARG
1	D	161	LYS
1	D	260	SER
1	D	313	ARG
1	D	372	GLN
1	D	401	ASP
1	D	413	LEU
1	D	423	VAL
1	D	430	ARG
1	D	443	SER
1	E	68	ARG
1	E	137	GLU
1	E	161	LYS
1	E	233	LEU
1	E	260	SER
1	E	314	ARG
1	E	324	GLU
1	E	372	GLN

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Mol	Chain	Res	Type
1	E	402	ARG
1	E	413	LEU
1	E	427	THR
1	E	439[A]	MET
1	E	439[B]	MET
1	F	16	LEU
1	F	26	GLN
1	F	68	ARG
1	F	118	ARG
1	F	161	LYS
1	F	193	ARG
1	F	251	LYS
1	F	260	SER
1	F	310	GLU
1	F	313	ARG
1	F	314	ARG
1	F	372	GLN
1	F	413	LEU
1	F	423	VAL
1	G	68	ARG
1	G	113	SER
1	G	115	LEU
1	G	161	LYS
1	G	175	GLU
1	G	177[A]	HIS
1	G	177[B]	HIS
1	G	260	SER
1	G	310	GLU
1	G	372	GLN
1	G	377	VAL
1	G	389	ARG
1	G	413	LEU
1	H	22	THR
1	H	68	ARG
1	H	72	ARG
1	H	144[A]	ARG
1	H	144[B]	ARG
1	H	161	LYS
1	H	169	ARG
1	H	175	GLU
1	H	260	SER
1	H	313	ARG

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Mol	Chain	Res	Type
1	H	372	GLN
1	H	413	LEU
1	H	439	MET
1	H	443	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	138	GLN
1	B	15	GLN
1	D	138	GLN
1	H	138	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 36 ligands modelled in this entry, 16 are monoatomic - leaving 20 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	$\# Z > 2$
2	FBP	G	601	-	18,20,20	0.46	0	21,32,32	0.66	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	FBP	C	601	-	18,20,20	0.57	0	21,32,32	0.74	0
6	WWA	G	603	-	35,35,35	2.28	6 (17%)	48,54,54	1.43	7 (14%)
2	FBP	F	601	-	18,20,20	0.26	0	21,32,32	0.64	0
2	FBP	A	601	-	18,20,20	0.41	0	21,32,32	0.53	0
3	OXL	B	602	4	5,5,5	2.17	2 (40%)	6,6,6	2.05	2 (33%)
3	OXL	G	602	4	5,5,5	1.87	2 (40%)	6,6,6	1.54	1 (16%)
3	OXL	C	602	4	5,5,5	2.09	2 (40%)	6,6,6	1.75	2 (33%)
6	WWA	C	603	-	35,35,35	2.25	6 (17%)	48,54,54	1.50	9 (18%)
2	FBP	H	601	-	18,20,20	0.62	0	21,32,32	0.72	1 (4%)
2	FBP	D	601	-	18,20,20	0.65	0	21,32,32	0.62	0
3	OXL	E	602	4	5,5,5	2.09	2 (40%)	6,6,6	1.66	2 (33%)
6	WWA	B	603	-	35,35,35	2.14	7 (20%)	48,54,54	1.70	10 (20%)
2	FBP	E	601	-	18,20,20	0.42	0	21,32,32	0.55	0
3	OXL	D	602	4	5,5,5	2.13	3 (60%)	6,6,6	2.51	3 (50%)
3	OXL	H	602	4	5,5,5	2.36	3 (60%)	6,6,6	1.29	1 (16%)
3	OXL	A	602	4	5,5,5	2.02	2 (40%)	6,6,6	1.79	2 (33%)
3	OXL	F	602	4	5,5,5	2.13	2 (40%)	6,6,6	2.06	3 (50%)
6	WWA	F	603	-	35,35,35	1.93	8 (22%)	48,54,54	1.65	10 (20%)
2	FBP	B	601	-	18,20,20	0.37	0	21,32,32	0.64	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	FBP	G	601	-	-	5/13/32/32	0/1/1/1
2	FBP	C	601	-	-	3/13/32/32	0/1/1/1
6	WWA	G	603	-	-	0/24/24/24	0/4/4/4
2	FBP	F	601	-	-	3/13/32/32	0/1/1/1
2	FBP	A	601	-	-	2/13/32/32	0/1/1/1
3	OXL	B	602	4	-	4/4/4/4	-
3	OXL	G	602	4	-	4/4/4/4	-
3	OXL	C	602	4	-	4/4/4/4	-
6	WWA	C	603	-	-	0/24/24/24	0/4/4/4
2	FBP	H	601	-	-	4/13/32/32	0/1/1/1
2	FBP	D	601	-	-	3/13/32/32	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	OXL	E	602	4	-	4/4/4/4	-
6	WWA	B	603	-	-	0/24/24/24	0/4/4/4
2	FBP	E	601	-	-	5/13/32/32	0/1/1/1
3	OXL	D	602	4	-	4/4/4/4	-
3	OXL	H	602	4	-	4/4/4/4	-
3	OXL	A	602	4	-	4/4/4/4	-
3	OXL	F	602	4	-	0/4/4/4	-
6	WWA	F	603	-	-	0/24/24/24	0/4/4/4
2	FBP	B	601	-	-	6/13/32/32	0/1/1/1

All (45) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	C	603	WWA	C8-S1	-6.40	1.67	1.77
6	G	603	WWA	C8-S1	-6.33	1.67	1.77
6	G	603	WWA	C2-S	-5.93	1.67	1.77
6	C	603	WWA	C2-S	-5.82	1.68	1.77
6	B	603	WWA	C7-S1	-5.13	1.69	1.77
6	G	603	WWA	C7-S1	-5.10	1.69	1.77
6	B	603	WWA	C8-S1	-5.01	1.69	1.77
6	B	603	WWA	C2-S	-4.80	1.69	1.77
6	C	603	WWA	C7-S1	-4.75	1.69	1.77
6	G	603	WWA	C16-C3	4.63	1.45	1.38
6	F	603	WWA	C2-S	-4.39	1.70	1.77
6	C	603	WWA	C3-S	-4.36	1.70	1.77
6	C	603	WWA	C16-C3	4.35	1.45	1.38
6	B	603	WWA	C6-C7	4.28	1.45	1.38
6	B	603	WWA	C3-S	-4.22	1.70	1.77
6	G	603	WWA	C6-C7	4.15	1.45	1.38
6	C	603	WWA	C6-C7	4.02	1.44	1.38
6	F	603	WWA	C16-C3	3.97	1.44	1.38
3	H	602	OXL	O2-C2	3.93	1.32	1.22
6	F	603	WWA	C8-S1	-3.92	1.70	1.77
6	F	603	WWA	C7-S1	-3.91	1.71	1.77
3	F	602	OXL	O2-C2	3.77	1.31	1.22
6	G	603	WWA	C3-S	-3.73	1.71	1.77
3	A	602	OXL	O2-C2	3.67	1.31	1.22
3	C	602	OXL	O2-C2	3.67	1.31	1.22
6	B	603	WWA	C16-C3	3.66	1.44	1.38
6	F	603	WWA	C6-C7	3.61	1.44	1.38
3	B	602	OXL	O2-C2	3.56	1.31	1.22

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	E	602	OXL	O2-C2	3.43	1.31	1.22
3	D	602	OXL	O2-C2	3.35	1.30	1.22
3	G	602	OXL	O2-C2	3.23	1.30	1.22
3	E	602	OXL	O4-C2	-3.14	1.22	1.30
6	F	603	WWA	C4-C5	2.97	1.46	1.41
3	B	602	OXL	O4-C2	-2.89	1.22	1.30
6	F	603	WWA	C3-S	-2.81	1.72	1.77
3	H	602	OXL	O4-C2	-2.80	1.22	1.30
3	C	602	OXL	O4-C2	-2.78	1.23	1.30
3	D	602	OXL	O4-C2	-2.65	1.23	1.30
3	F	602	OXL	O4-C2	-2.64	1.23	1.30
3	A	602	OXL	O4-C2	-2.63	1.23	1.30
3	G	602	OXL	O4-C2	-2.59	1.23	1.30
6	B	603	WWA	C9-C8	2.53	1.43	1.39
6	F	603	WWA	C13-C12	2.31	1.42	1.39
3	H	602	OXL	C2-C1	2.07	1.58	1.54
3	D	602	OXL	C2-C1	2.05	1.58	1.54

All (53) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	F	603	WWA	C4-C3-S	5.67	126.67	119.14
3	D	602	OXL	O4-C2-C1	4.49	121.53	112.83
6	B	603	WWA	C4-C3-S	4.43	125.03	119.14
6	C	603	WWA	C4-C3-S	4.08	124.57	119.14
3	F	602	OXL	O4-C2-C1	3.83	120.26	112.83
6	B	603	WWA	O6-S-C3	3.76	112.58	107.96
3	B	602	OXL	O4-C2-C1	3.62	119.85	112.83
6	B	603	WWA	C14-C7-S1	3.61	123.94	119.14
6	G	603	WWA	C14-C7-S1	3.59	123.91	119.14
6	C	603	WWA	C5-C15-N1	3.46	124.13	121.00
6	F	603	WWA	C14-C7-S1	3.42	123.69	119.14
3	A	602	OXL	O4-C2-C1	3.37	119.36	112.83
3	C	602	OXL	O4-C2-C1	3.31	119.25	112.83
6	G	603	WWA	C4-C3-S	3.20	123.40	119.14
3	D	602	OXL	O3-C1-C2	3.13	118.91	112.83
3	E	602	OXL	O4-C2-C1	3.12	118.89	112.83
6	G	603	WWA	C5-C15-N1	3.06	123.77	121.00
3	G	602	OXL	O4-C2-C1	3.05	118.74	112.83
6	B	603	WWA	O6-S-C2	2.94	111.58	107.96
3	B	602	OXL	O3-C1-C2	2.91	118.47	112.83
6	C	603	WWA	C14-C7-S1	2.84	122.92	119.14

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	F	603	WWA	C3-C16-N1	2.57	126.27	123.21
6	F	603	WWA	C4-C3-C16	-2.54	116.26	119.04
6	B	603	WWA	O1-C10-C11	-2.53	113.23	119.85
3	F	602	OXL	O3-C1-C2	2.50	117.68	112.83
6	B	603	WWA	C3-S-C2	-2.49	99.80	104.37
3	H	602	OXL	O4-C2-C1	2.49	117.65	112.83
3	D	602	OXL	O2-C2-C1	-2.48	115.47	120.63
6	F	603	WWA	O6-S-C3	2.42	110.94	107.96
2	H	601	FBP	O6-P2-O4P	2.39	112.89	106.44
6	F	603	WWA	C17-C2-S	2.37	122.31	119.15
6	B	603	WWA	O-C-C19	-2.37	113.66	119.85
6	C	603	WWA	O2-C12-C13	-2.29	113.85	119.85
6	G	603	WWA	C3-C16-N1	2.23	125.86	123.21
6	F	603	WWA	C4-C5-N	2.20	120.55	118.01
6	F	603	WWA	O4-S1-C8	2.18	110.64	107.96
6	G	603	WWA	O1-C10-C11	-2.16	114.19	119.85
6	C	603	WWA	C3-C16-N1	2.15	125.78	123.21
3	C	602	OXL	O3-C1-C2	2.15	116.99	112.83
6	F	603	WWA	C5-C15-N1	2.13	122.93	121.00
6	G	603	WWA	O6-S-C2	2.12	110.57	107.96
3	E	602	OXL	O3-C1-C2	2.12	116.93	112.83
6	C	603	WWA	O3-S1-C8	2.11	110.55	107.96
6	G	603	WWA	O-C-C19	-2.08	114.40	119.85
6	B	603	WWA	C3-C16-N1	2.07	125.67	123.21
6	B	603	WWA	C5-C15-N1	2.05	122.86	121.00
6	C	603	WWA	O7-C18-C17	-2.04	114.51	119.85
6	C	603	WWA	O1-C10-C11	-2.04	114.53	119.85
3	A	602	OXL	O3-C1-C2	2.03	116.76	112.83
6	C	603	WWA	O-C-C19	-2.02	114.57	119.85
6	F	603	WWA	O-C-C19	-2.02	114.58	119.85
3	F	602	OXL	O2-C2-C1	-2.01	116.43	120.63
6	B	603	WWA	O7-C18-C17	-2.01	114.59	119.85

There are no chirality outliers.

All (59) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	B	601	FBP	C1-O1-P1-O2P
2	E	601	FBP	C1-O1-P1-O1P
2	E	601	FBP	C1-O1-P1-O2P
2	G	601	FBP	C1-O1-P1-O1P
2	G	601	FBP	C1-O1-P1-O3P

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Mol	Chain	Res	Type	Atoms
2	H	601	FBP	C1-O1-P1-O2P
2	H	601	FBP	C1-O1-P1-O3P
2	A	601	FBP	C4-C5-C6-O6
2	B	601	FBP	C4-C5-C6-O6
2	C	601	FBP	C4-C5-C6-O6
2	D	601	FBP	C4-C5-C6-O6
2	E	601	FBP	C4-C5-C6-O6
2	F	601	FBP	C4-C5-C6-O6
2	G	601	FBP	C4-C5-C6-O6
2	H	601	FBP	C4-C5-C6-O6
2	A	601	FBP	O5-C5-C6-O6
2	C	601	FBP	O5-C5-C6-O6
2	D	601	FBP	O5-C5-C6-O6
2	E	601	FBP	O5-C5-C6-O6
2	F	601	FBP	O5-C5-C6-O6
2	H	601	FBP	O5-C5-C6-O6
2	B	601	FBP	O5-C5-C6-O6
2	G	601	FBP	O5-C5-C6-O6
3	G	602	OXL	O3-C1-C2-O4
2	B	601	FBP	C1-O1-P1-O1P
3	H	602	OXL	O3-C1-C2-O4
3	C	602	OXL	O3-C1-C2-O4
3	E	602	OXL	O3-C1-C2-O4
3	B	602	OXL	O3-C1-C2-O4
3	D	602	OXL	O3-C1-C2-O4
3	B	602	OXL	O1-C1-C2-O2
3	C	602	OXL	O1-C1-C2-O2
3	D	602	OXL	O1-C1-C2-O2
3	E	602	OXL	O1-C1-C2-O2
2	B	601	FBP	O1-C1-C2-O5
2	C	601	FBP	O1-C1-C2-O5
3	A	602	OXL	O3-C1-C2-O4
3	A	602	OXL	O1-C1-C2-O2
3	G	602	OXL	O1-C1-C2-O2
3	H	602	OXL	O1-C1-C2-O2
3	G	602	OXL	O1-C1-C2-O4
3	G	602	OXL	O3-C1-C2-O2
3	E	602	OXL	O3-C1-C2-O2
3	B	602	OXL	O1-C1-C2-O4
3	B	602	OXL	O3-C1-C2-O2
3	C	602	OXL	O1-C1-C2-O4
3	C	602	OXL	O3-C1-C2-O2

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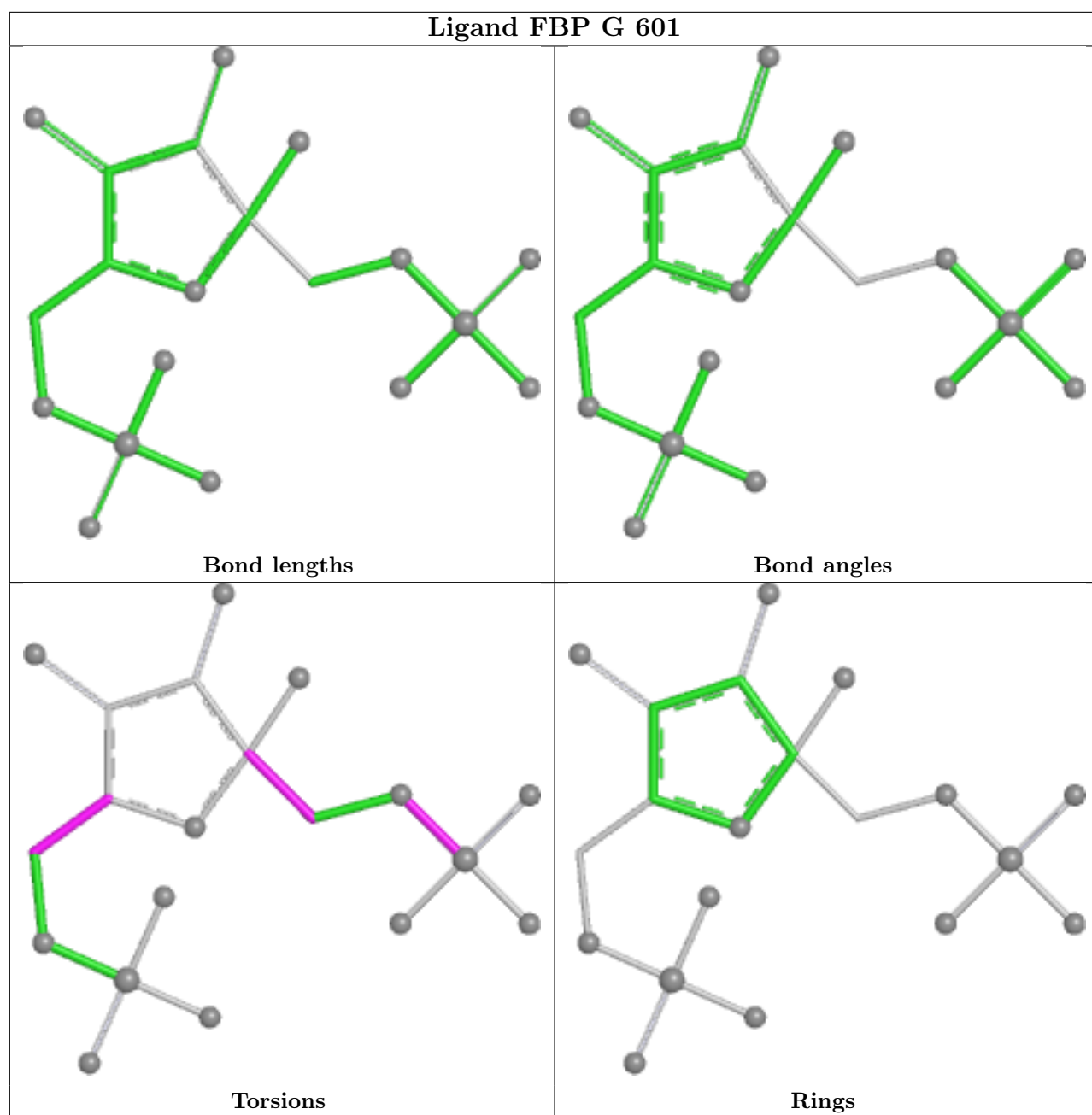
Mol	Chain	Res	Type	Atoms
3	D	602	OXL	O1-C1-C2-O4
3	E	602	OXL	O1-C1-C2-O4
3	D	602	OXL	O3-C1-C2-O2
3	A	602	OXL	O1-C1-C2-O4
3	A	602	OXL	O3-C1-C2-O2
3	H	602	OXL	O1-C1-C2-O4
2	B	601	FBP	C1-O1-P1-O3P
2	D	601	FBP	C1-O1-P1-O2P
2	E	601	FBP	C1-O1-P1-O3P
2	F	601	FBP	C1-O1-P1-O2P
3	H	602	OXL	O3-C1-C2-O2
2	G	601	FBP	O1-C1-C2-O5

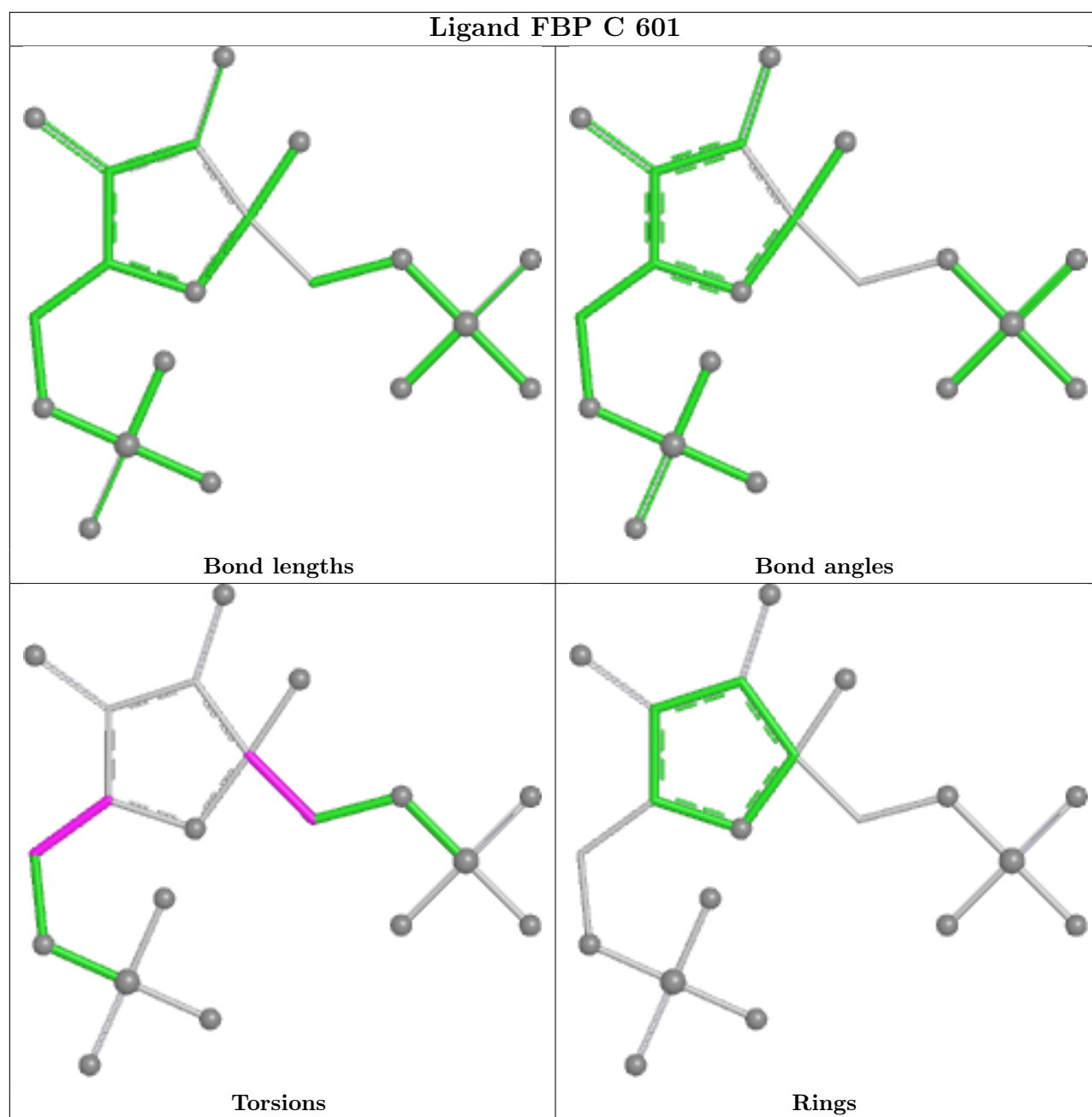
There are no ring outliers.

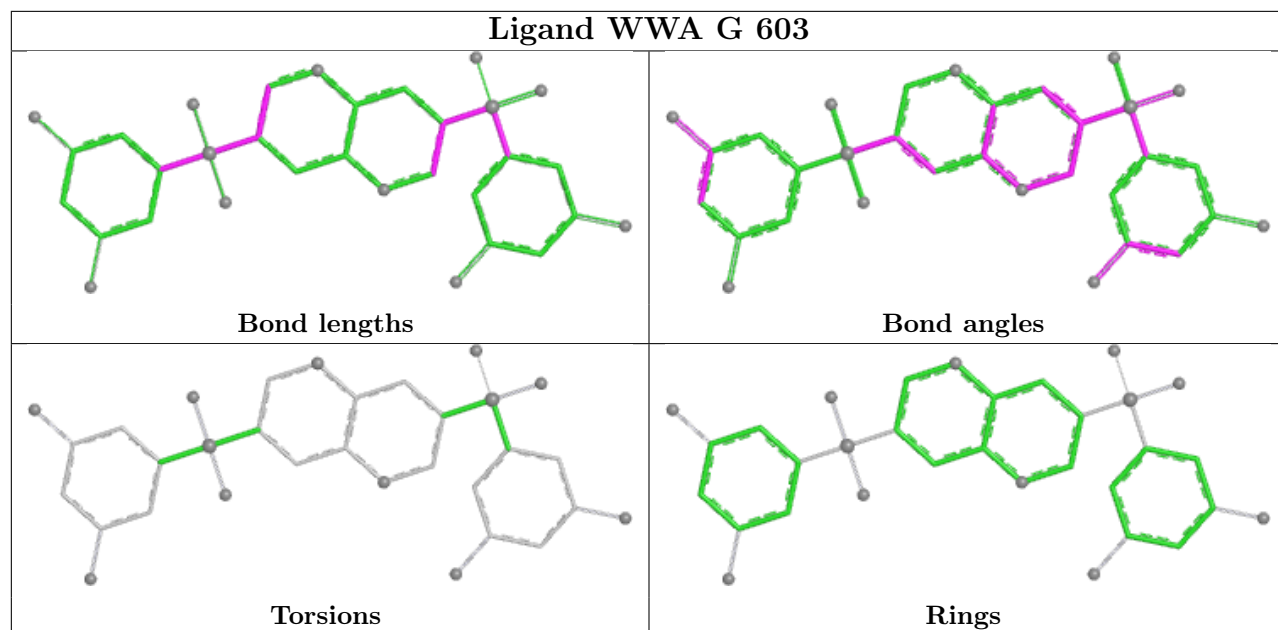
4 monomers are involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	601	FBP	1	0
2	H	601	FBP	1	0
2	E	601	FBP	1	0
2	B	601	FBP	1	0

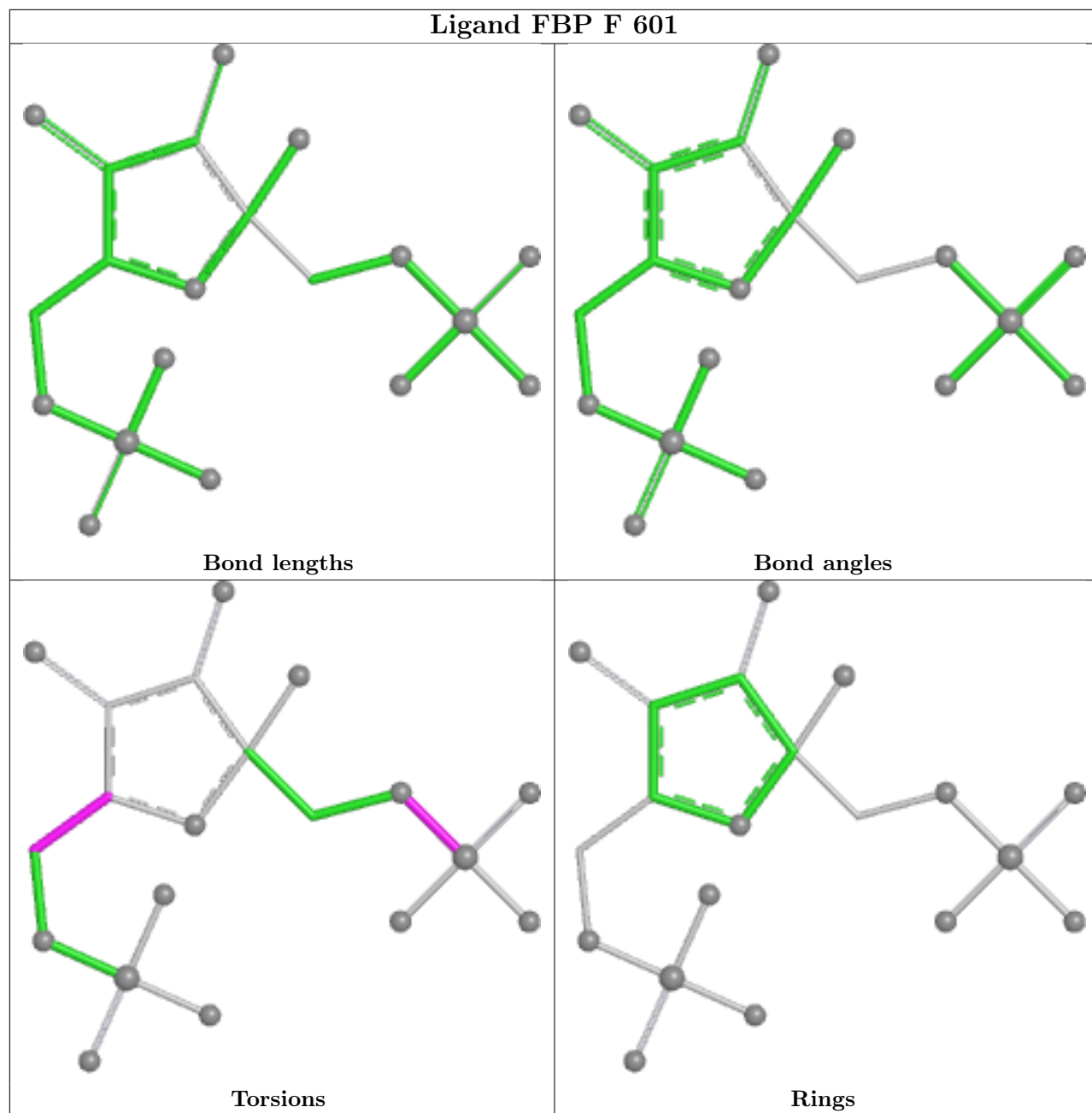
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

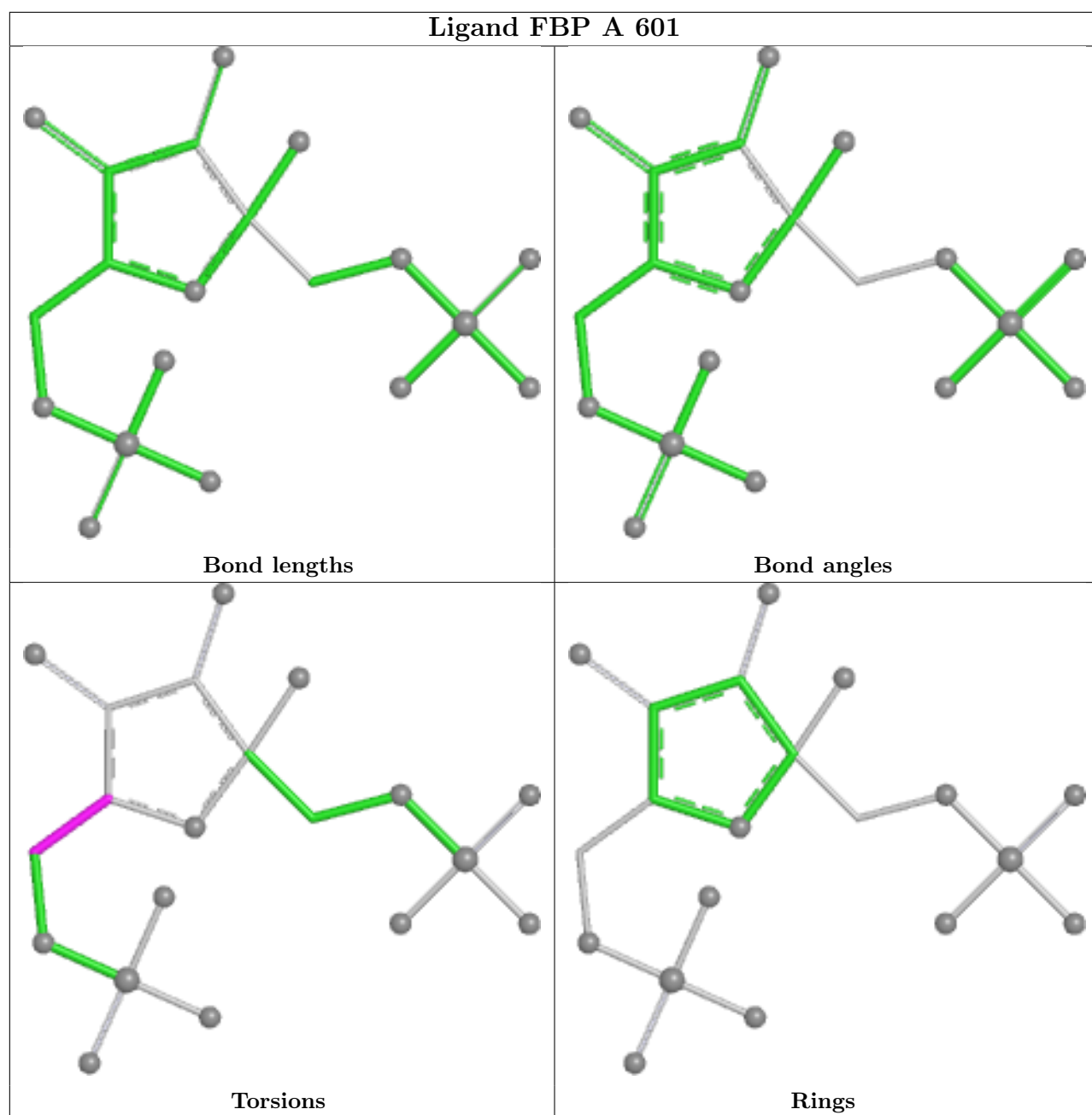


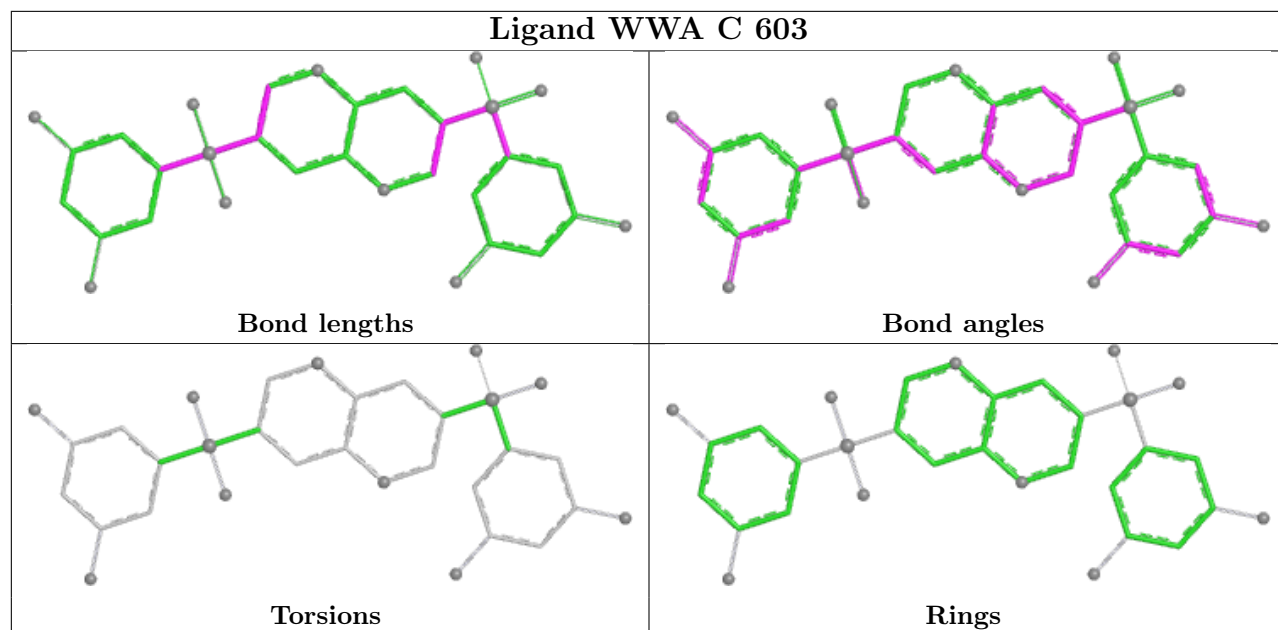


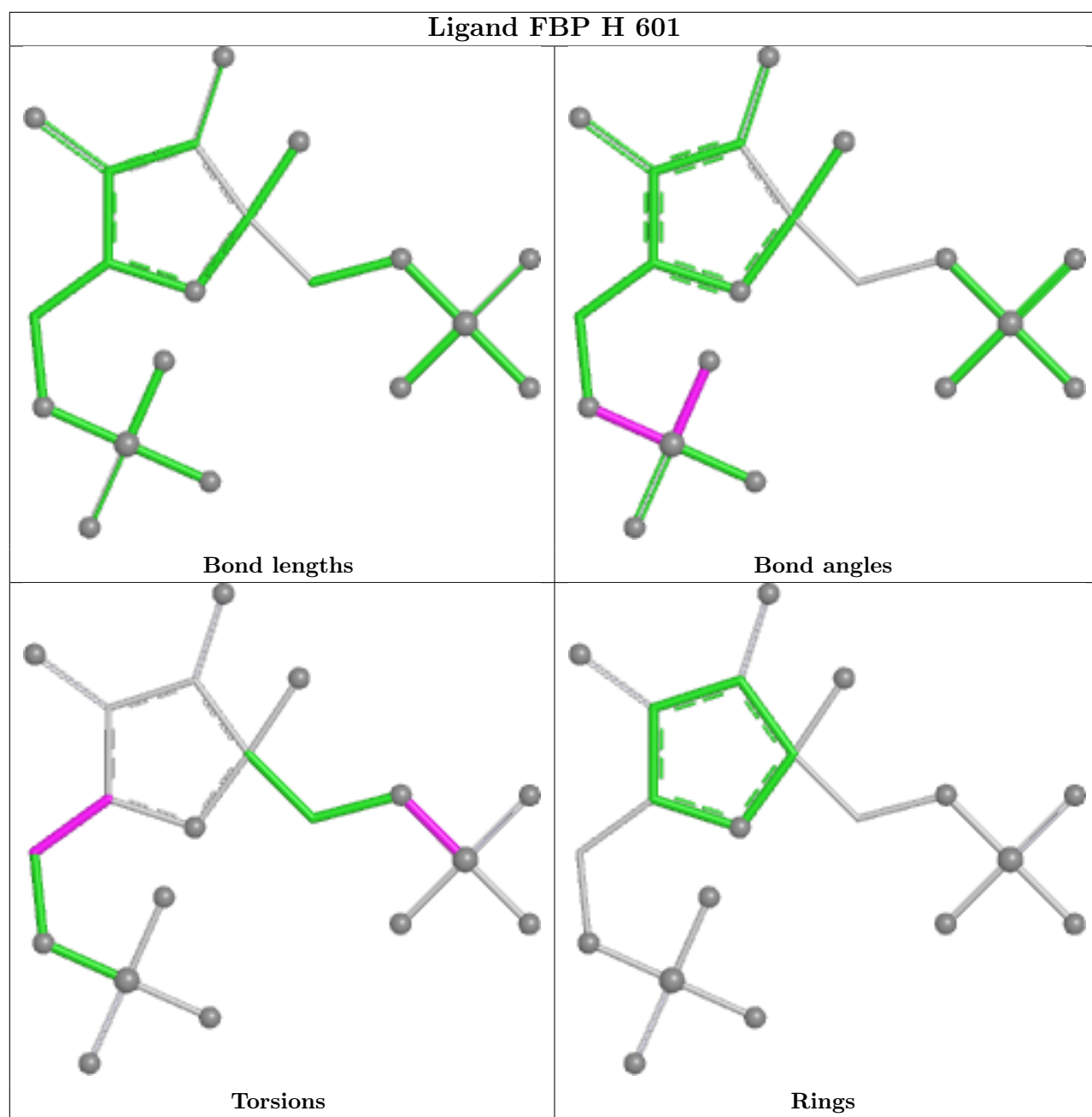


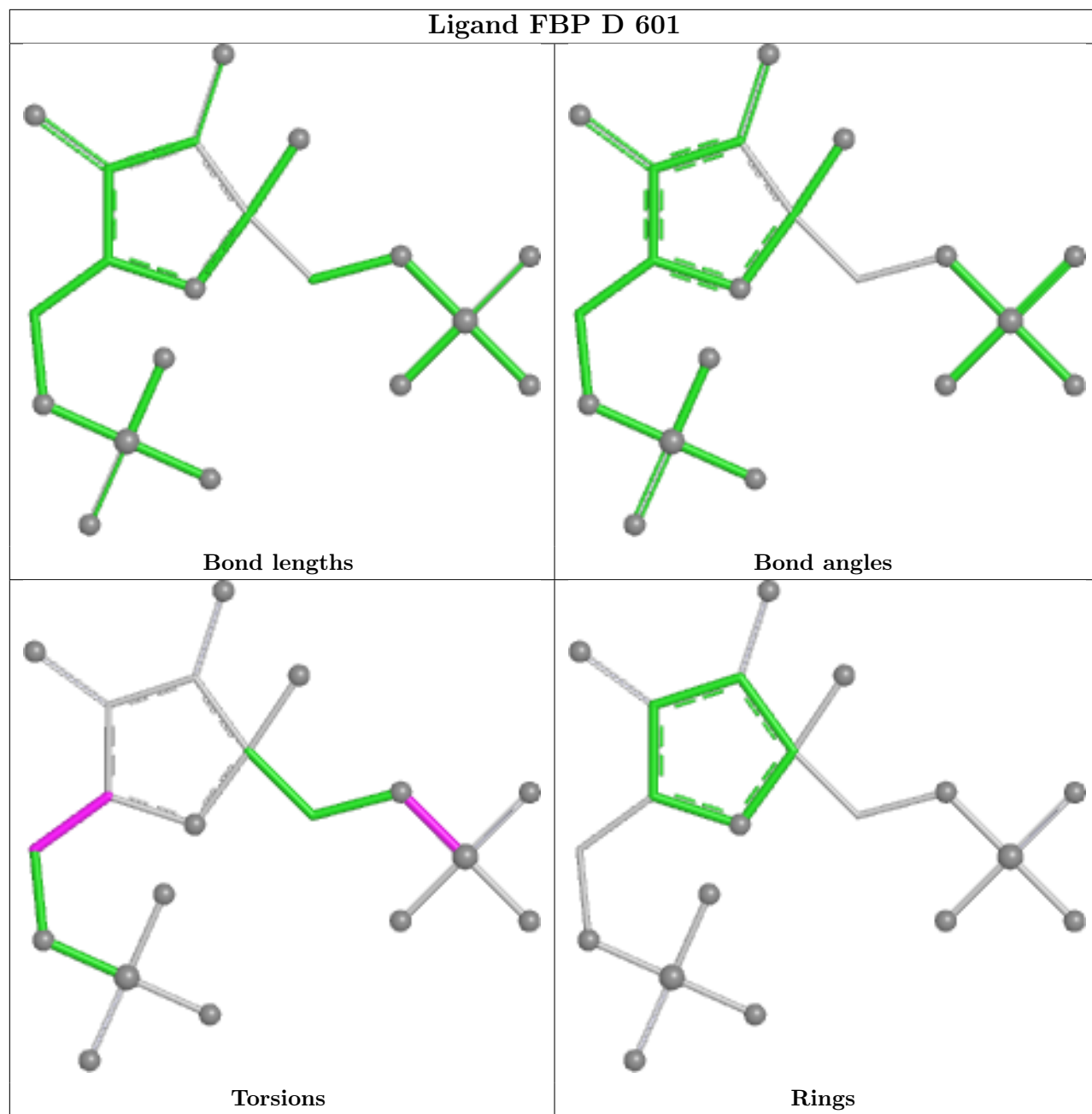
Ligand FBP F 601

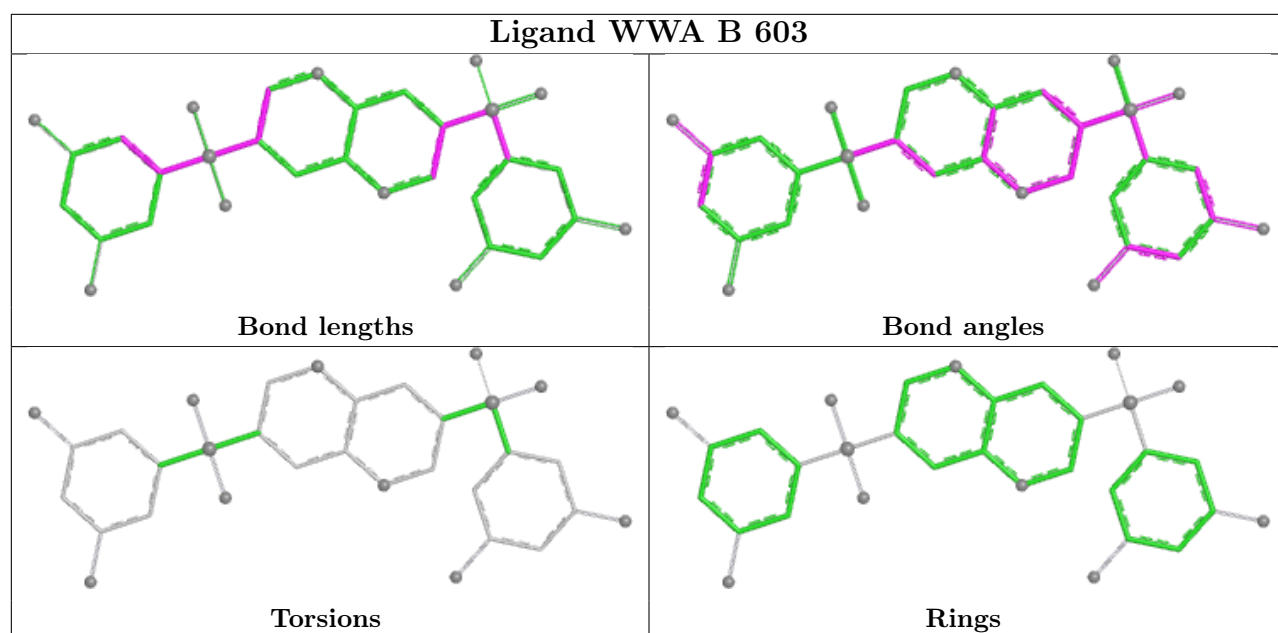


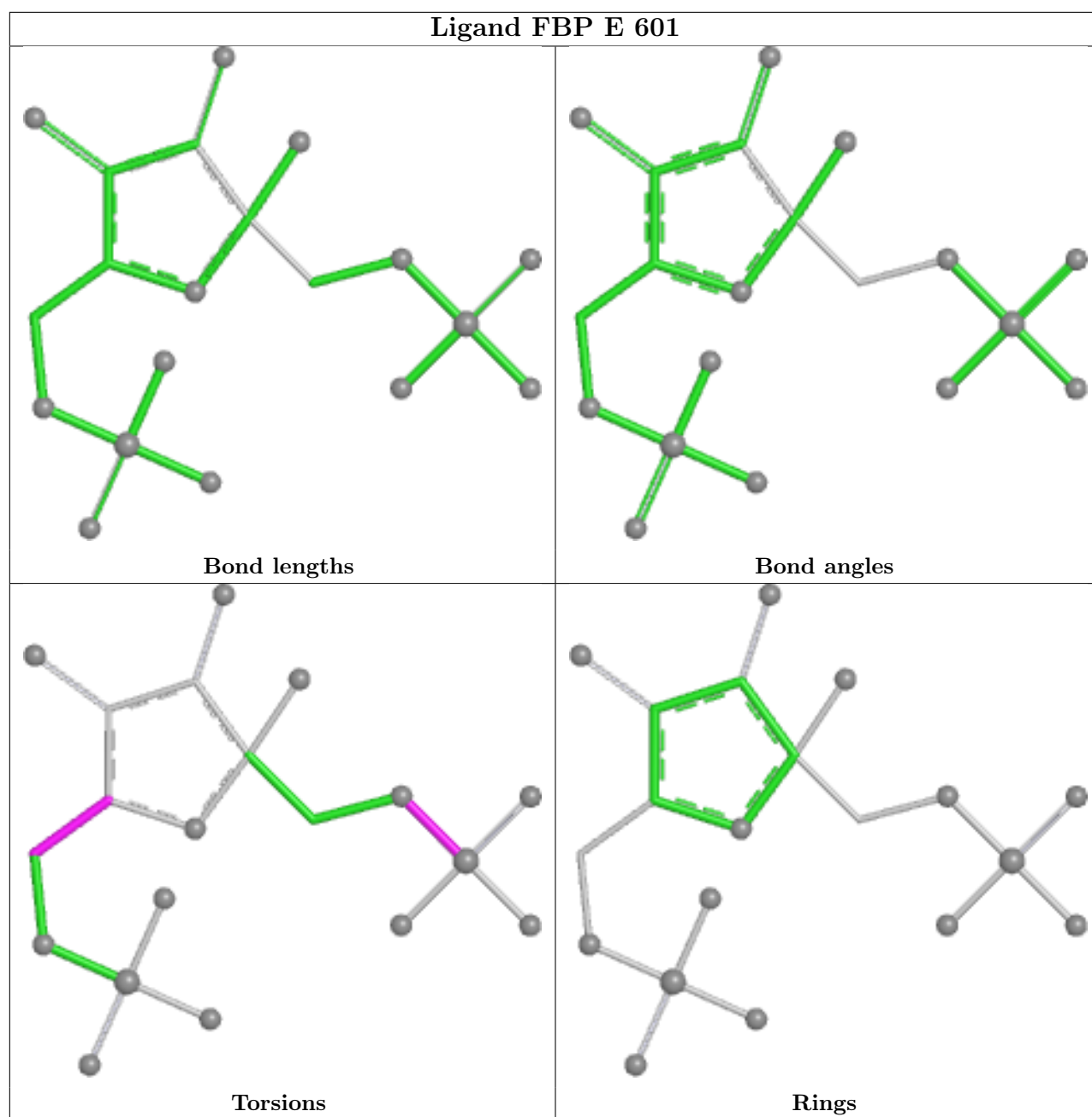


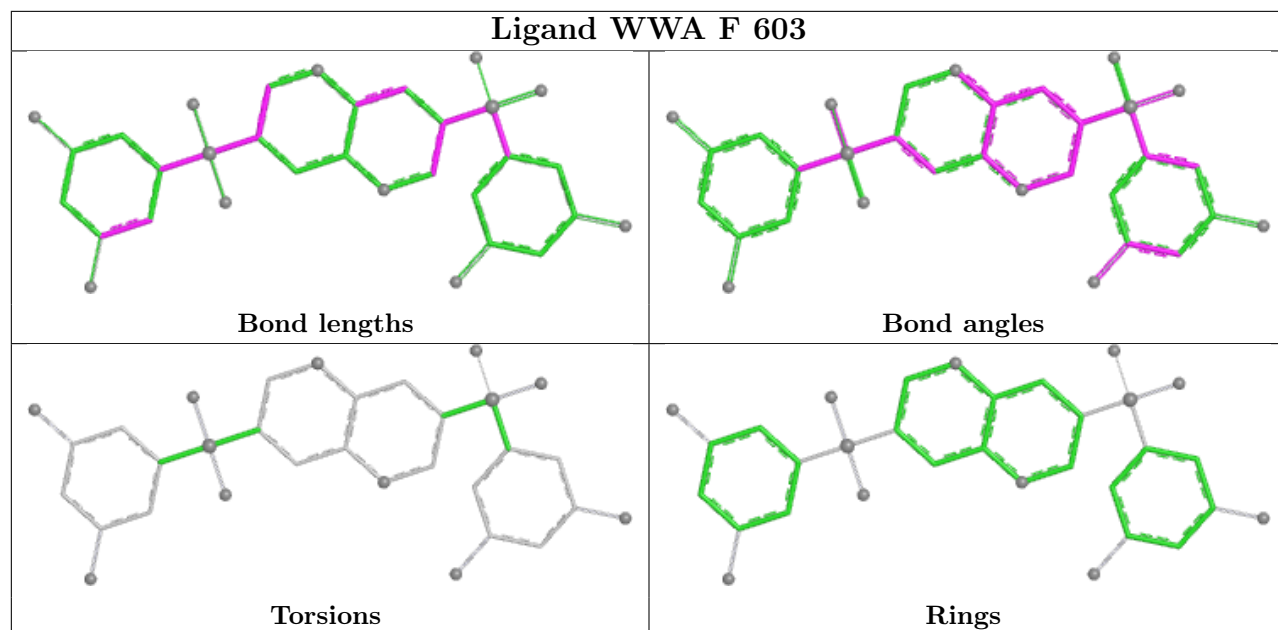


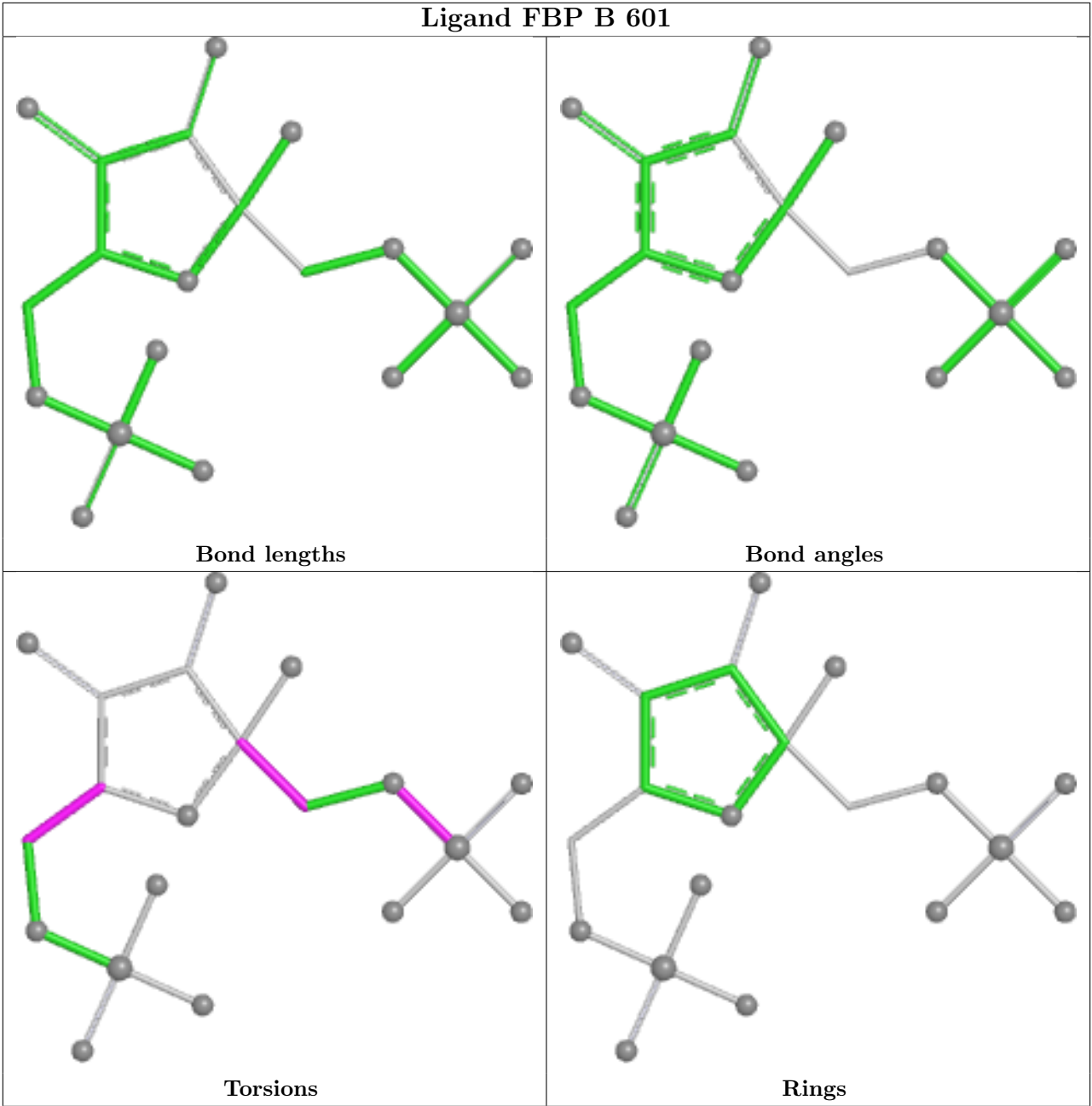












5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	H	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	H	132:GLY	C	133:PRO	N	2.66

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å ²)	Q<0.9
1	A	418/447 (93%)	1.53	117 (27%) 1 1	32, 78, 111, 121	12 (2%)
1	B	436/447 (97%)	0.56	18 (4%) 41 37	25, 53, 84, 96	8 (1%)
1	C	424/447 (94%)	0.97	55 (12%) 7 6	24, 62, 87, 106	9 (2%)
1	D	424/447 (94%)	0.13	10 (2%) 59 56	22, 41, 67, 102	8 (1%)
1	E	420/447 (93%)	1.72	148 (35%) 1 1	31, 77, 115, 126	12 (2%)
1	F	432/447 (96%)	0.88	42 (9%) 13 11	26, 57, 88, 107	8 (1%)
1	G	422/447 (94%)	1.06	60 (14%) 6 5	24, 58, 85, 97	11 (2%)
1	H	425/447 (95%)	0.17	12 (2%) 55 51	20, 41, 67, 98	9 (2%)
All	All	3401/3576 (95%)	0.87	462 (13%) 7 5	20, 58, 101, 126	77 (2%)

All (462) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	E	177[A]	HIS	6.6
1	E	130	GLY	6.4
1	A	445	SER	6.3
1	E	349	GLY	5.6
1	E	25	PHE	5.4
1	E	165	VAL	5.3
1	F	133	PRO	5.3
1	A	26	GLN	5.1
1	E	344	VAL	5.1
1	E	135	LEU	4.9
1	E	134	GLY	4.9
1	D	21	GLY	4.8
1	D	132	GLY	4.7
1	G	177[A]	HIS	4.7
1	E	103	VAL	4.7
1	A	143	LEU	4.7

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Mol	Chain	Res	Type	RSRZ
1	A	132	GLY	4.6
1	C	133	PRO	4.6
1	E	23	ALA	4.6
1	E	122	ILE	4.5
1	G	133	PRO	4.4
1	A	61	ALA	4.4
1	A	103	VAL	4.4
1	E	395	ILE	4.4
1	E	150	GLY	4.4
1	E	115	LEU	4.3
1	E	397	ALA	4.2
1	C	103	VAL	4.2
1	H	21	GLY	4.1
1	A	63	ILE	4.1
1	E	416	PHE	4.1
1	B	445	SER	4.1
1	E	169[A]	ARG	4.0
1	G	21	GLY	4.0
1	A	124	LEU	4.0
1	E	387	LEU	4.0
1	G	115	LEU	4.0
1	E	120	VAL	4.0
1	F	442[A]	LEU	3.9
1	A	392	PRO	3.9
1	E	394	ALA	3.8
1	F	11	ALA	3.8
1	G	129	PRO	3.8
1	E	162	ALA	3.8
1	E	250	THR	3.8
1	E	367	VAL	3.8
1	C	63	ILE	3.8
1	E	119	PRO	3.7
1	A	123	ALA	3.7
1	G	252	PRO	3.7
1	G	253	ARG	3.7
1	E	445	SER	3.7
1	A	367	VAL	3.6
1	E	140	VAL	3.6
1	E	174	PRO	3.6
1	A	365	ILE	3.6
1	H	133	PRO	3.6
1	F	143	LEU	3.6

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Mol	Chain	Res	Type	RSRZ
1	F	114	PRO	3.6
1	A	115	LEU	3.5
1	G	172	LEU	3.5
1	A	119	PRO	3.5
1	G	143	LEU	3.5
1	A	151	VAL	3.5
1	E	400	VAL	3.5
1	F	115	LEU	3.5
1	G	64	GLY	3.5
1	G	65	PRO	3.5
1	A	169[A]	ARG	3.5
1	E	288	ALA	3.5
1	G	63	ILE	3.5
1	A	310[A]	GLU	3.4
1	A	122	ILE	3.4
1	E	365	ILE	3.4
1	E	159	VAL	3.4
1	F	445	SER	3.4
1	C	115	LEU	3.4
1	C	129	PRO	3.4
1	C	20	LEU	3.4
1	G	103	VAL	3.4
1	A	120	VAL	3.3
1	A	313	ARG	3.3
1	E	99	SER	3.3
1	E	348	THR	3.3
1	E	361	ARG	3.3
1	A	81	MET	3.3
1	E	386	LEU	3.3
1	B	313	ARG	3.3
1	A	425	VAL	3.3
1	A	34	MET	3.3
1	A	395	ILE	3.3
1	E	123	ALA	3.3
1	G	136	SER	3.3
1	E	391	PRO	3.3
1	A	409	GLU	3.3
1	C	173	GLY	3.3
1	H	132	GLY	3.3
1	E	151	VAL	3.2
1	E	425	VAL	3.2
1	C	134	GLY	3.2

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Mol	Chain	Res	Type	RSRZ
1	E	24	PHE	3.2
1	A	135	LEU	3.2
1	A	391	PRO	3.2
1	G	66	ALA	3.2
1	G	224	GLN	3.2
1	H	25	PHE	3.2
1	A	252	PRO	3.2
1	B	114	PRO	3.2
1	A	384	PHE	3.2
1	C	64	GLY	3.2
1	G	134	GLY	3.2
1	A	249	ILE	3.2
1	A	250	THR	3.2
1	E	427	THR	3.2
1	E	121	ALA	3.1
1	F	389	ARG	3.1
1	D	140	VAL	3.1
1	E	154	VAL	3.1
1	E	404	VAL	3.1
1	A	259	THR	3.1
1	A	279	THR	3.1
1	G	114	PRO	3.1
1	F	414	ARG	3.1
1	G	70	VAL	3.1
1	E	153	ILE	3.1
1	E	345	LEU	3.1
1	E	172	LEU	3.0
1	G	445	SER	3.0
1	E	118	ARG	3.0
1	C	176	GLY	3.0
1	E	438	ILE	3.0
1	G	168	VAL	3.0
1	E	346	THR	3.0
1	E	166	ALA	3.0
1	A	56	SER	3.0
1	E	443[A]	SER	3.0
1	A	59	ILE	3.0
1	A	439[A]	MET	3.0
1	A	394	ALA	3.0
1	E	167	ALA	3.0
1	B	442[A]	LEU	3.0
1	C	275	LEU	3.0

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Mol	Chain	Res	Type	RSRZ
1	E	116	SER	3.0
1	C	295	ILE	2.9
1	A	400	VAL	2.9
1	E	388	TYR	2.9
1	E	268	ASP	2.9
1	C	299	ALA	2.9
1	E	366	ALA	2.9
1	F	394	ALA	2.9
1	A	386	LEU	2.9
1	F	396	TRP	2.9
1	E	423	VAL	2.9
1	A	288	ALA	2.9
1	B	133	PRO	2.9
1	E	61	ALA	2.9
1	A	393	GLU	2.9
1	G	310	GLU	2.9
1	A	150	GLY	2.9
1	A	427	THR	2.8
1	G	361	ARG	2.8
1	C	215	ILE	2.8
1	A	140	VAL	2.8
1	E	147	VAL	2.8
1	C	174	PRO	2.8
1	G	106	ALA	2.8
1	E	245	LEU	2.8
1	E	417	LEU	2.8
1	G	245	LEU	2.8
1	D	25	PHE	2.8
1	G	110	PHE	2.8
1	B	392	PRO	2.8
1	G	262	VAL	2.8
1	E	242	THR	2.8
1	A	36	ASP	2.8
1	E	155	PHE	2.8
1	E	158	PHE	2.8
1	D	130	GLY	2.8
1	E	112	GLY	2.8
1	F	395	ILE	2.8
1	E	383	VAL	2.8
1	H	22	THR	2.8
1	E	218	GLU	2.8
1	A	77	ILE	2.7

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Mol	Chain	Res	Type	RSRZ
1	C	213	ILE	2.7
1	C	288	ALA	2.7
1	E	104	ARG	2.7
1	F	142	ASP	2.7
1	E	358	TYR	2.7
1	G	286	VAL	2.7
1	A	355	LEU	2.7
1	C	143	LEU	2.7
1	E	143	LEU	2.7
1	A	255	THR	2.7
1	E	339	ALA	2.7
1	A	253	ARG	2.7
1	E	384	PHE	2.7
1	E	392	PRO	2.7
1	F	391	PRO	2.7
1	G	265	ALA	2.7
1	A	390	GLU	2.7
1	C	409	GLU	2.7
1	A	402	ARG	2.7
1	B	389	ARG	2.7
1	C	248	MET	2.7
1	G	135	LEU	2.7
1	H	23	ALA	2.7
1	E	295	ILE	2.6
1	G	25	PHE	2.6
1	A	286	VAL	2.6
1	F	139	ASP	2.6
1	G	34	MET	2.6
1	E	354	LEU	2.6
1	F	413	LEU	2.6
1	A	159	VAL	2.6
1	E	302	ALA	2.6
1	A	329	GLY	2.6
1	C	268	ASP	2.6
1	D	134	GLY	2.6
1	E	407	GLY	2.6
1	C	65	PRO	2.6
1	A	76[A]	MET	2.6
1	B	444	ILE	2.6
1	A	404	VAL	2.6
1	C	136	SER	2.6
1	E	183	SER	2.6

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Mol	Chain	Res	Type	RSRZ
1	F	433	SER	2.6
1	C	282	GLY	2.6
1	E	181	ILE	2.6
1	A	155	PHE	2.6
1	A	416	PHE	2.6
1	E	75	GLU	2.6
1	E	198	LEU	2.6
1	B	419	VAL	2.6
1	A	388	TYR	2.6
1	E	253	ARG	2.5
1	E	128	GLY	2.5
1	D	24	PHE	2.5
1	F	406	PHE	2.5
1	H	24	PHE	2.5
1	A	275	LEU	2.5
1	E	113	SER	2.5
1	E	370	SER	2.5
1	F	167	ALA	2.5
1	C	34	MET	2.5
1	C	42	LEU	2.5
1	A	84	ALA	2.5
1	G	176	GLY	2.5
1	A	60	ILE	2.5
1	E	59	ILE	2.5
1	E	179	ILE	2.5
1	E	204	ILE	2.5
1	A	86	LEU	2.5
1	E	93	HIS	2.5
1	C	280	ALA	2.5
1	E	389	ARG	2.5
1	A	346	THR	2.5
1	E	58	SER	2.5
1	E	62	THR	2.5
1	D	401	ASP	2.5
1	G	95	TYR	2.5
1	B	422	LEU	2.5
1	A	96	HIS	2.5
1	H	144[A]	ARG	2.5
1	E	101	ALA	2.5
1	E	156	ALA	2.5
1	G	116[A]	SER	2.5
1	C	100	ILE	2.4

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Mol	Chain	Res	Type	RSRZ
1	B	413	LEU	2.4
1	E	124	LEU	2.4
1	D	177[A]	HIS	2.4
1	E	335	PHE	2.4
1	E	70	VAL	2.4
1	E	168	VAL	2.4
1	E	364	VAL	2.4
1	F	404	VAL	2.4
1	A	366	ALA	2.4
1	G	121	ALA	2.4
1	G	126	THR	2.4
1	A	58	SER	2.4
1	E	152	ASP	2.4
1	A	172	LEU	2.4
1	A	154	VAL	2.4
1	A	165	VAL	2.4
1	A	396	TRP	2.4
1	E	34	MET	2.4
1	A	32	ALA	2.4
1	E	299	ALA	2.4
1	A	65	PRO	2.4
1	A	298	GLU	2.4
1	A	431	PRO	2.4
1	E	324	GLU	2.4
1	A	345	LEU	2.4
1	F	135	LEU	2.4
1	F	358	TYR	2.4
1	G	170	ALA	2.4
1	E	100	ILE	2.4
1	A	442	LEU	2.4
1	F	387	LEU	2.4
1	H	34	MET	2.4
1	F	140	VAL	2.4
1	C	281	LYS	2.4
1	G	67	SER	2.3
1	A	130	GLY	2.3
1	B	130	GLY	2.3
1	E	178	GLY	2.3
1	F	434	GLY	2.3
1	A	73	LEU	2.3
1	E	182	ILE	2.3
1	A	88	PHE	2.3

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Mol	Chain	Res	Type	RSRZ
1	C	117	TYR	2.3
1	B	340	ALA	2.3
1	F	129	PRO	2.3
1	E	313	ARG	2.3
1	E	410	SER	2.3
1	E	60	ILE	2.3
1	E	413	LEU	2.3
1	C	110	PHE	2.3
1	G	416	PHE	2.3
1	E	199[A]	GLU	2.3
1	G	98[A]	GLU	2.3
1	E	66	ALA	2.3
1	E	374	ALA	2.3
1	F	429	TRP	2.3
1	G	113	SER	2.3
1	A	378	HIS	2.3
1	E	81	MET	2.3
1	E	401[A]	ASP	2.3
1	A	251	LYS	2.3
1	E	110	PHE	2.3
1	E	380	CYS	2.3
1	G	151	VAL	2.3
1	A	97	ALA	2.3
1	A	174	PRO	2.3
1	G	285	PRO	2.3
1	A	118	ARG	2.3
1	A	389	ARG	2.3
1	E	277	GLY	2.3
1	E	83	ILE	2.3
1	F	398	ASP	2.3
1	F	416	PHE	2.3
1	A	383	VAL	2.3
1	C	114	PRO	2.3
1	E	403	ARG	2.3
1	E	440	ARG	2.3
1	F	385	PRO	2.3
1	C	69	SER	2.2
1	C	113	SER	2.2
1	C	445	SER	2.2
1	D	34	MET	2.2
1	E	408	ILE	2.2
1	F	328	ILE	2.2

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Mol	Chain	Res	Type	RSRZ
1	G	247	SER	2.2
1	A	397	ALA	2.2
1	G	156	ALA	2.2
1	A	349	GLY	2.2
1	A	382	GLY	2.2
1	C	172[A]	LEU	2.2
1	A	100	ILE	2.2
1	A	433[A]	SER	2.2
1	A	108	GLU	2.2
1	C	19	GLU	2.2
1	E	310[A]	GLU	2.2
1	G	148	GLU	2.2
1	E	144	ARG	2.2
1	C	97	ALA	2.2
1	B	115	LEU	2.2
1	C	245	LEU	2.2
1	G	275	LEU	2.2
1	A	179	ILE	2.2
1	G	153	ILE	2.2
1	G	142	ASP	2.2
1	A	414	ARG	2.2
1	F	418	ARG	2.2
1	A	145	PHE	2.2
1	A	285	PRO	2.2
1	A	423	VAL	2.2
1	C	107	VAL	2.2
1	F	423	VAL	2.2
1	C	66	ALA	2.2
1	C	170	ALA	2.2
1	E	97	ALA	2.2
1	A	245	LEU	2.2
1	E	422	LEU	2.2
1	C	249	ILE	2.2
1	G	249	ILE	2.2
1	E	69	SER	2.2
1	H	418	ARG	2.2
1	C	252	PRO	2.2
1	A	377	VAL	2.1
1	F	367	VAL	2.1
1	C	135	LEU	2.1
1	E	86	LEU	2.1
1	C	94	GLU	2.1

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Mol	Chain	Res	Type	RSRZ
1	A	67	SER	2.1
1	A	247	SER	2.1
1	A	254	PRO	2.1
1	E	406	PHE	2.1
1	F	138	GLN	2.1
1	G	248	MET	2.1
1	E	340	ALA	2.1
1	E	362	ALA	2.1
1	G	33	ALA	2.1
1	E	173	GLY	2.1
1	A	343	ILE	2.1
1	C	77	ILE	2.1
1	B	169[A]	ARG	2.1
1	F	313	ARG	2.1
1	H	310	GLU	2.1
1	A	276	SER	2.1
1	E	109	SER	2.1
1	F	251	LYS	2.1
1	G	155	PHE	2.1
1	B	404	VAL	2.1
1	E	376	GLN	2.1
1	E	441	VAL	2.1
1	C	121	ALA	2.1
1	E	171	ALA	2.1
1	C	279	THR	2.1
1	G	306	ARG	2.1
1	A	182	ILE	2.1
1	A	268	ASP	2.1
1	E	139	ASP	2.1
1	A	248	MET	2.1
1	C	244	MET	2.1
1	H	177[A]	HIS	2.1
1	G	24	PHE	2.1
1	G	171	ALA	2.1
1	E	396	TRP	2.1
1	C	253	ARG	2.1
1	A	75[A]	GLU	2.1
1	B	108	GLU	2.1
1	E	95	TYR	2.1
1	A	116	SER	2.1
1	C	372	GLN	2.0
1	E	292	GLN	2.0

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Mol	Chain	Res	Type	RSRZ
1	A	406	PHE	2.0
1	C	88	PHE	2.0
1	A	111	ALA	2.0
1	C	144	ARG	2.0
1	E	375	ARG	2.0
1	G	42	LEU	2.0
1	F	112	GLY	2.0
1	G	282	GLY	2.0
1	A	62	THR	2.0
1	F	408	ILE	2.0
1	E	399	ASP	2.0
1	F	392	PRO	2.0
1	A	274	MET	2.0
1	E	149	HIS	2.0
1	G	96	HIS	2.0
1	A	353	GLN	2.0
1	B	400	VAL	2.0
1	E	221	PHE	2.0
1	E	341	ALA	2.0
1	F	397	ALA	2.0
1	E	283	ASN	2.0
1	A	215	ILE	2.0
1	F	181	ILE	2.0
1	A	129	PRO	2.0
1	C	119	PRO	2.0
1	E	157	SER	2.0

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

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

6.3 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

6.4 Ligands [i](#)

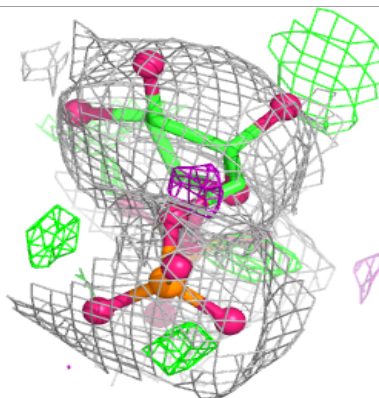
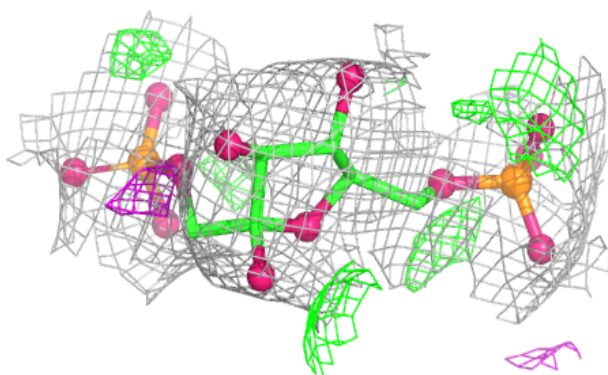
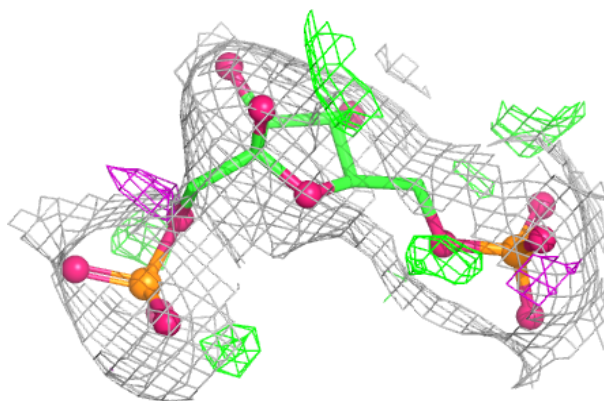
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
5	K	E	604	1/1	0.72	0.12	117,117,117,117	0
2	FBP	A	601	20/20	0.79	0.15	94,95,97,97	0
3	OXL	A	602	6/6	0.82	0.11	88,88,88,88	0
2	FBP	E	601	20/20	0.82	0.13	95,96,96,96	0
4	MG	A	603	1/1	0.83	0.22	84,84,84,84	0
3	OXL	G	602	6/6	0.85	0.13	79,79,79,79	0
4	MG	F	604	1/1	0.86	0.12	59,59,59,59	0
3	OXL	C	602	6/6	0.86	0.12	80,80,81,81	0
4	MG	G	604	1/1	0.87	0.20	83,83,83,83	0
5	K	C	605	1/1	0.88	0.09	98,98,98,98	0
3	OXL	D	602	6/6	0.88	0.12	58,59,59,60	0
3	OXL	H	602	6/6	0.89	0.12	55,55,56,56	0
5	K	B	605	1/1	0.89	0.08	80,80,80,80	0
3	OXL	F	602	6/6	0.90	0.09	68,68,68,69	0
2	FBP	F	601	20/20	0.90	0.10	65,70,72,72	0
3	OXL	E	602	6/6	0.90	0.10	93,93,93,93	0
5	K	F	605	1/1	0.90	0.07	90,90,90,90	0
2	FBP	B	601	20/20	0.92	0.09	58,61,63,64	0
5	K	A	604	1/1	0.92	0.06	106,106,106,106	0
2	FBP	G	601	20/20	0.93	0.09	54,57,59,60	0
6	WWA	G	603	32/32	0.93	0.09	55,58,59,59	14
4	MG	D	603	1/1	0.94	0.11	56,56,56,56	0
3	OXL	B	602	6/6	0.94	0.07	66,67,67,67	0
6	WWA	C	603	32/32	0.94	0.10	56,58,59,60	14
4	MG	C	604	1/1	0.94	0.06	48,48,48,48	0
5	K	G	605	1/1	0.95	0.06	76,76,76,76	0
6	WWA	B	603	32/32	0.95	0.08	42,43,45,45	14
4	MG	E	603	1/1	0.95	0.12	79,79,79,79	0
6	WWA	F	603	32/32	0.95	0.09	45,48,49,50	14
2	FBP	C	601	20/20	0.95	0.08	52,55,59,59	0
5	K	H	604	1/1	0.96	0.05	63,63,63,63	0
2	FBP	H	601	20/20	0.97	0.06	31,34,35,35	0
2	FBP	D	601	20/20	0.98	0.06	33,37,40,40	0
4	MG	B	604	1/1	0.98	0.04	44,44,44,44	0
4	MG	H	603	1/1	0.99	0.04	38,38,38,38	0
5	K	D	604	1/1	0.99	0.08	49,49,49,49	0

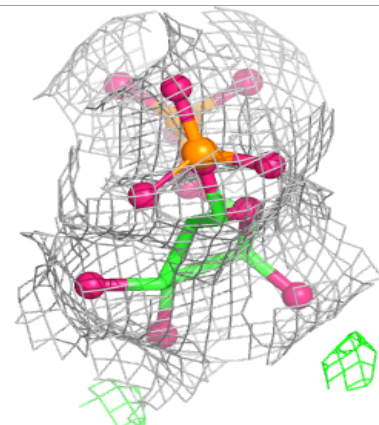
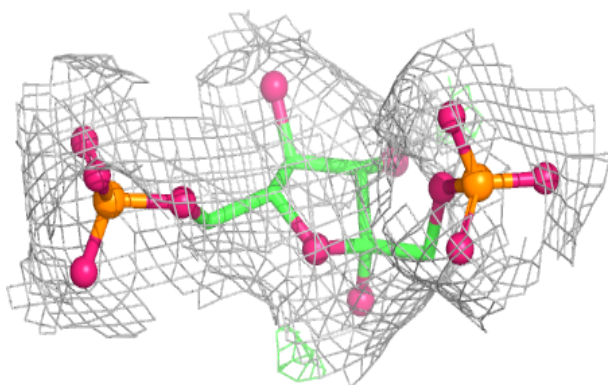
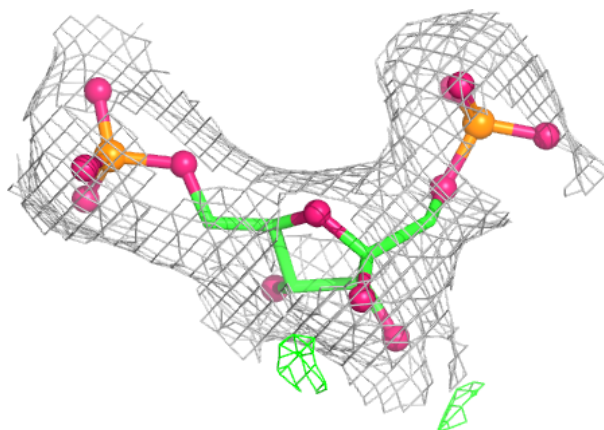
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around FBP A 601:

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

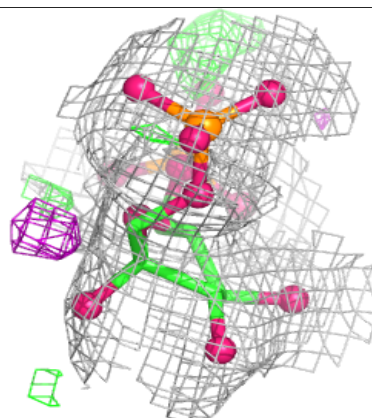
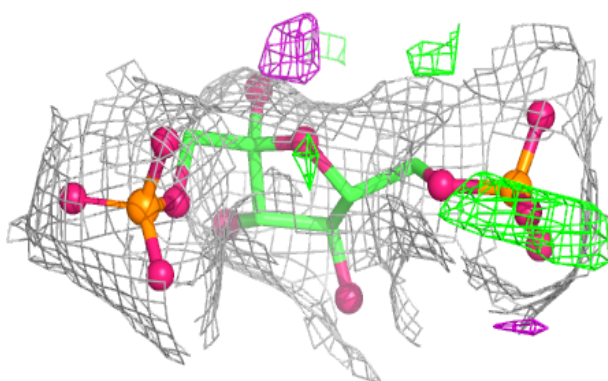
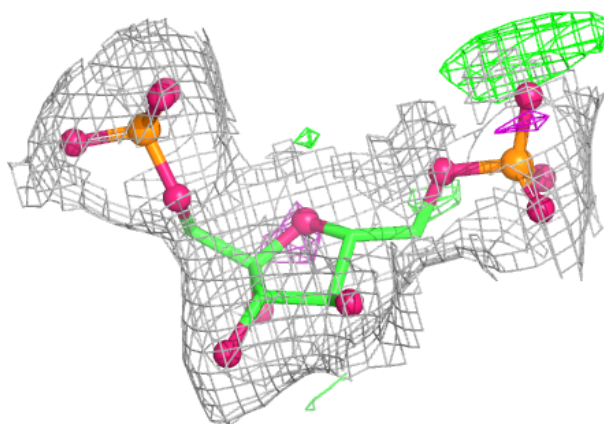
**Electron density around FBP E 601:**

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

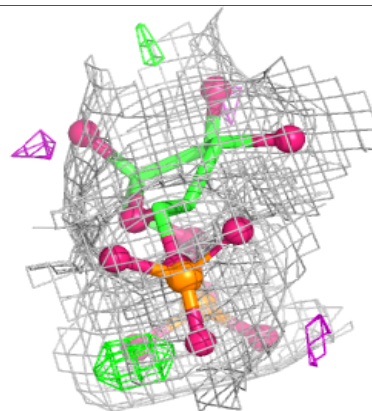
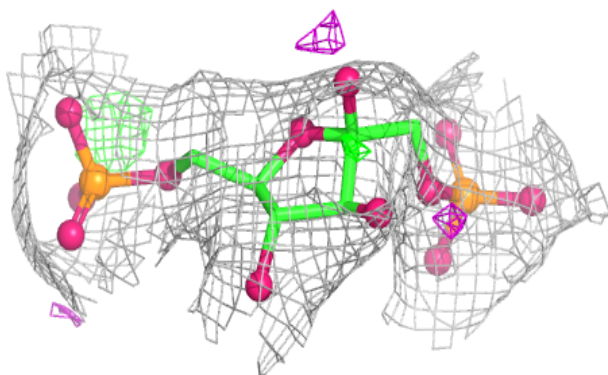
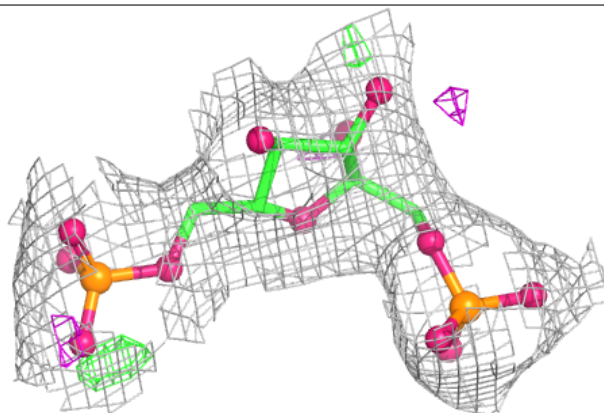


Electron density around FBP F 601:

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

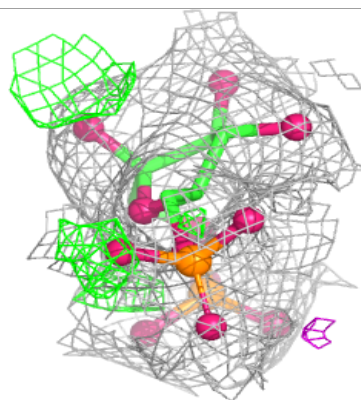
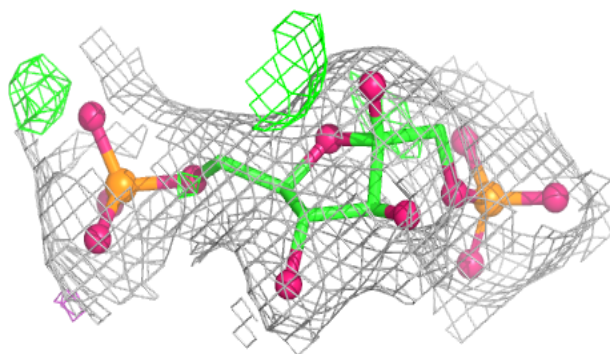
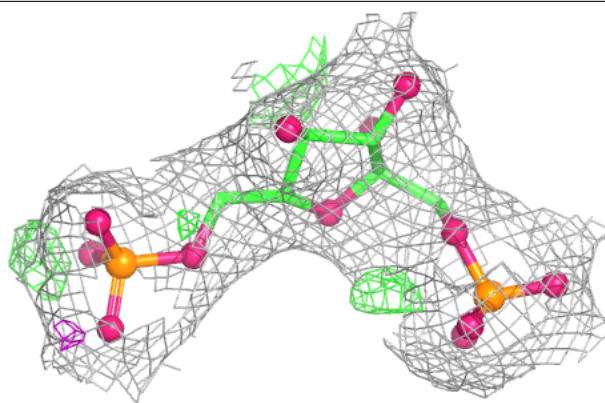
**Electron density around FBP B 601:**

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

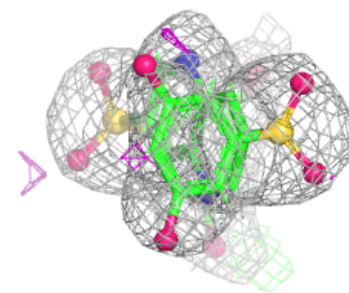
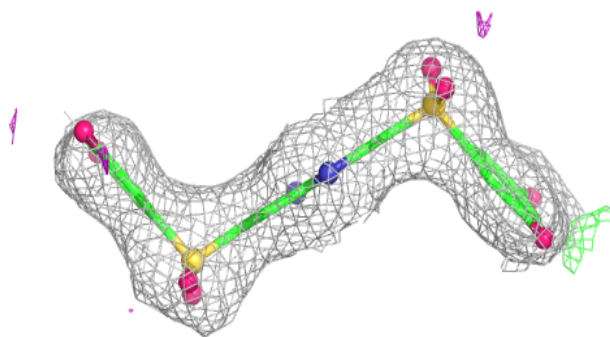
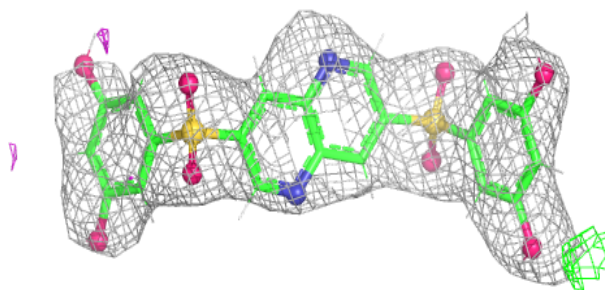


Electron density around FBP G 601:

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

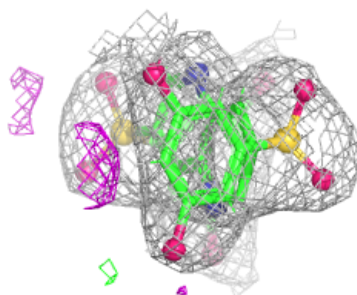
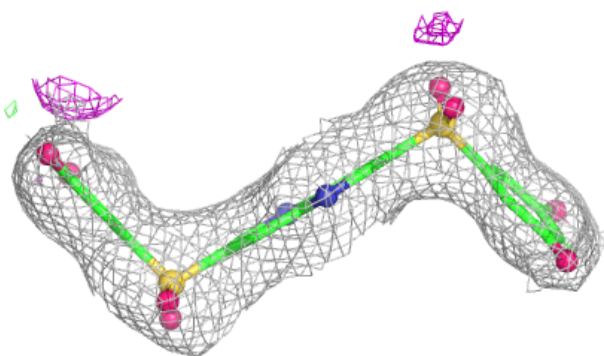
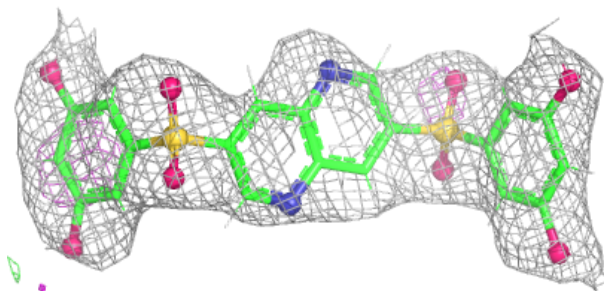
**Electron density around WWA G 603:**

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

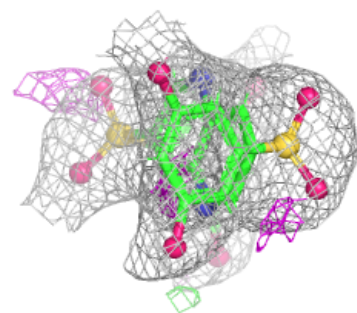
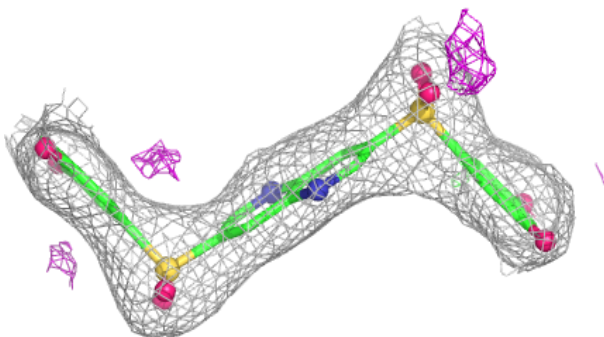
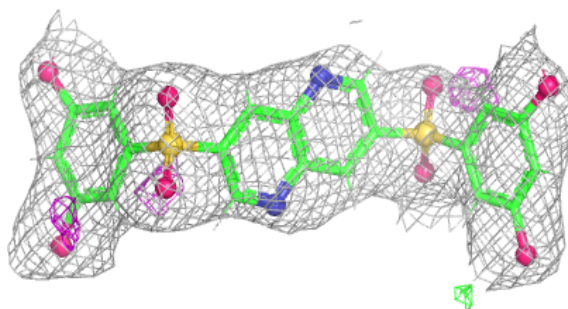


Electron density around WWA C 603:

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

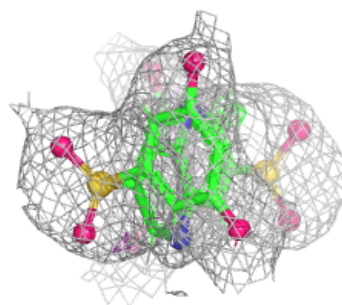
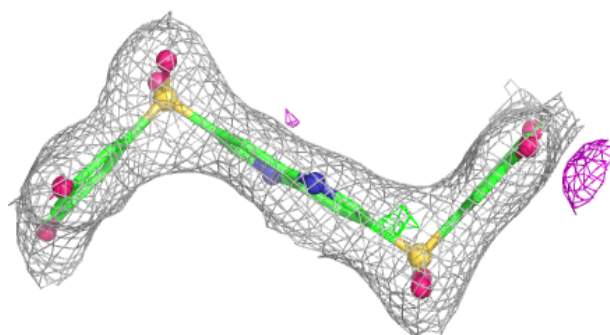
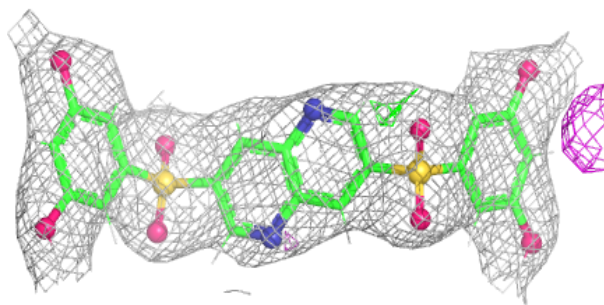
**Electron density around WWA B 603:**

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

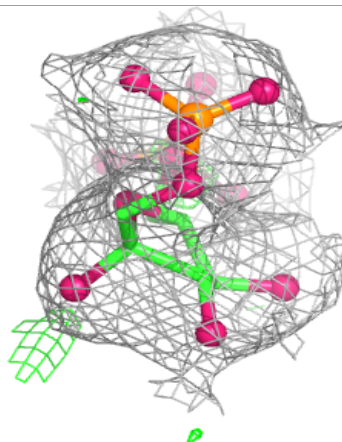
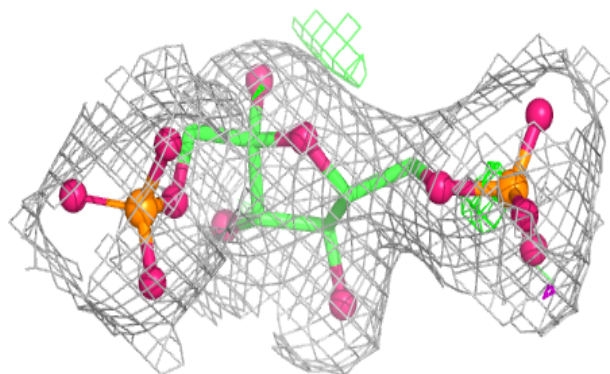
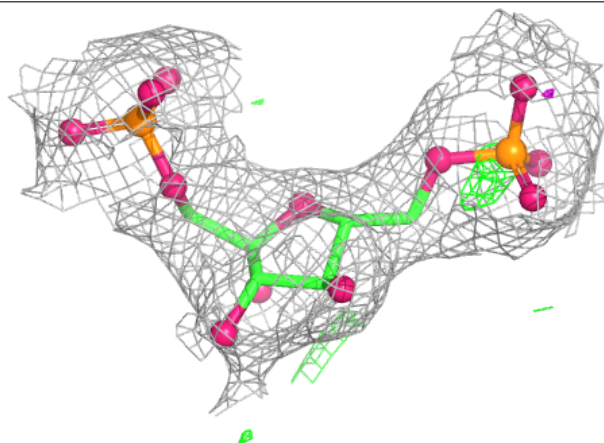


Electron density around WWA F 603:

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

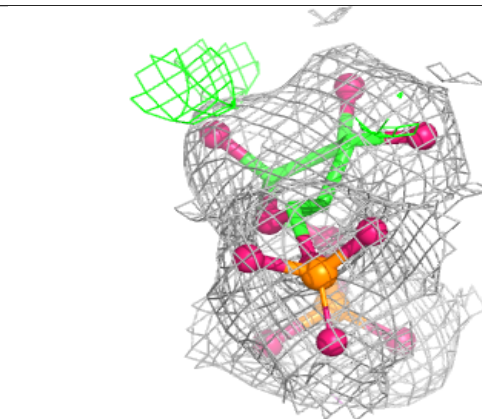
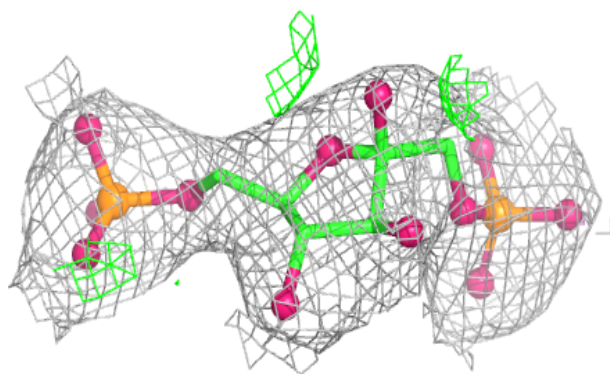
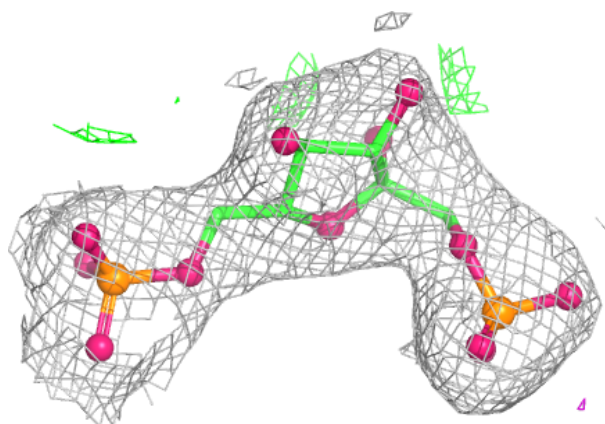
**Electron density around FBP C 601:**

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

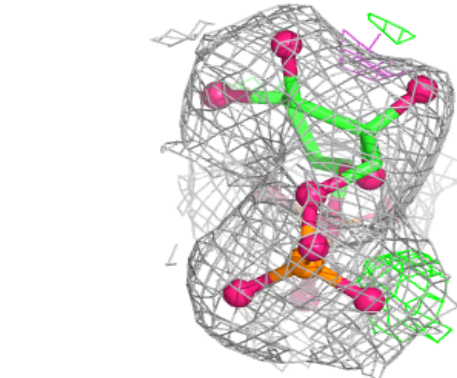
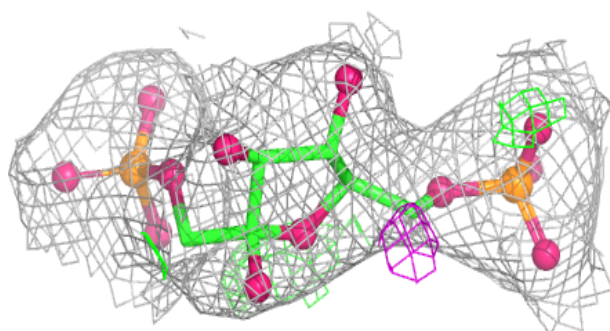
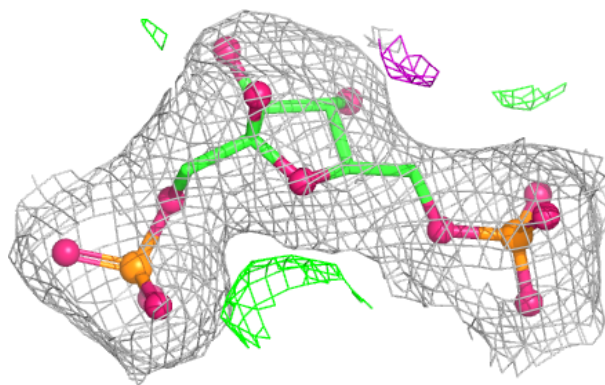


Electron density around FBP H 601:

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

**Electron density around FBP D 601:**

$2mF_o-DF_c$ (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.