



Full wwPDB X-ray Structure Validation Report ⓘ

Apr 25, 2026 – 06:30 PM EDT

PDB ID : 6V76 / pdb_00006v76
Title : Crystal Structure of Human PKM2 in Complex with L-valine
Authors : Nandi, S.; Dey, M.
Deposited on : 2019-12-07
Resolution : 2.75 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 Phenix2.0
Mogul : 2022.3.0, CSD as543be (2022)
Xtriage (Phenix) : 2.0
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 : 9.0.010 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

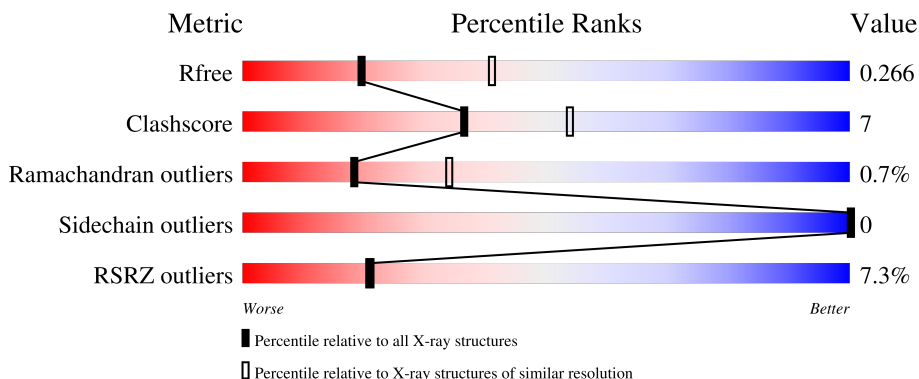
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.75 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	1009 (2.76-2.76)
Clashscore	190562	1044 (2.76-2.76)
Ramachandran outliers	187476	1024 (2.76-2.76)
Sidechain outliers	187428	1024 (2.76-2.76)
RSRZ outliers	180081	1009 (2.76-2.76)

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	550	 6% 79% 14% 6%
1	B	550	 9% 79% 14% 7%
1	C	550	 8% 79% 14% 7%
1	D	550	 4% 65% 13% 22%

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
7	OXL	B	605	-	X	X	-
7	OXL	C	610	-	X	-	-

2 Entry composition [i](#)

There are 9 unique types of molecules in this entry. The entry contains 14055 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Pyruvate kinase PKM.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	C	511	Total 3629	C 2290	N 639	O 676	S 24	0	0	0
1	A	515	Total 3559	C 2226	N 624	O 685	S 24	0	0	0
1	B	511	Total 3551	C 2221	N 640	O 667	S 23	0	0	0
1	D	431	Total 3067	C 1930	N 543	O 573	S 21	0	0	0

There are 76 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	-18	MET	-	initiating methionine	UNP P14618
C	-17	GLY	-	expression tag	UNP P14618
C	-16	SER	-	expression tag	UNP P14618
C	-15	SER	-	expression tag	UNP P14618
C	-14	HIS	-	expression tag	UNP P14618
C	-13	HIS	-	expression tag	UNP P14618
C	-12	HIS	-	expression tag	UNP P14618
C	-11	HIS	-	expression tag	UNP P14618
C	-10	HIS	-	expression tag	UNP P14618
C	-9	HIS	-	expression tag	UNP P14618
C	-8	SER	-	expression tag	UNP P14618
C	-7	SER	-	expression tag	UNP P14618
C	-6	GLY	-	expression tag	UNP P14618
C	-5	LEU	-	expression tag	UNP P14618
C	-4	VAL	-	expression tag	UNP P14618
C	-3	PRO	-	expression tag	UNP P14618
C	-2	ARG	-	expression tag	UNP P14618
C	-1	GLY	-	expression tag	UNP P14618
C	0	SER	-	expression tag	UNP P14618
A	-18	MET	-	initiating methionine	UNP P14618
A	-17	GLY	-	expression tag	UNP P14618

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Chain	Residue	Modelled	Actual	Comment	Reference
A	-16	SER	-	expression tag	UNP P14618
A	-15	SER	-	expression tag	UNP P14618
A	-14	HIS	-	expression tag	UNP P14618
A	-13	HIS	-	expression tag	UNP P14618
A	-12	HIS	-	expression tag	UNP P14618
A	-11	HIS	-	expression tag	UNP P14618
A	-10	HIS	-	expression tag	UNP P14618
A	-9	HIS	-	expression tag	UNP P14618
A	-8	SER	-	expression tag	UNP P14618
A	-7	SER	-	expression tag	UNP P14618
A	-6	GLY	-	expression tag	UNP P14618
A	-5	LEU	-	expression tag	UNP P14618
A	-4	VAL	-	expression tag	UNP P14618
A	-3	PRO	-	expression tag	UNP P14618
A	-2	ARG	-	expression tag	UNP P14618
A	-1	GLY	-	expression tag	UNP P14618
A	0	SER	-	expression tag	UNP P14618
B	-18	MET	-	initiating methionine	UNP P14618
B	-17	GLY	-	expression tag	UNP P14618
B	-16	SER	-	expression tag	UNP P14618
B	-15	SER	-	expression tag	UNP P14618
B	-14	HIS	-	expression tag	UNP P14618
B	-13	HIS	-	expression tag	UNP P14618
B	-12	HIS	-	expression tag	UNP P14618
B	-11	HIS	-	expression tag	UNP P14618
B	-10	HIS	-	expression tag	UNP P14618
B	-9	HIS	-	expression tag	UNP P14618
B	-8	SER	-	expression tag	UNP P14618
B	-7	SER	-	expression tag	UNP P14618
B	-6	GLY	-	expression tag	UNP P14618
B	-5	LEU	-	expression tag	UNP P14618
B	-4	VAL	-	expression tag	UNP P14618
B	-3	PRO	-	expression tag	UNP P14618
B	-2	ARG	-	expression tag	UNP P14618
B	-1	GLY	-	expression tag	UNP P14618
B	0	SER	-	expression tag	UNP P14618
D	-18	MET	-	initiating methionine	UNP P14618
D	-17	GLY	-	expression tag	UNP P14618
D	-16	SER	-	expression tag	UNP P14618
D	-15	SER	-	expression tag	UNP P14618
D	-14	HIS	-	expression tag	UNP P14618
D	-13	HIS	-	expression tag	UNP P14618

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Chain	Residue	Modelled	Actual	Comment	Reference
D	-12	HIS	-	expression tag	UNP P14618
D	-11	HIS	-	expression tag	UNP P14618
D	-10	HIS	-	expression tag	UNP P14618
D	-9	HIS	-	expression tag	UNP P14618
D	-8	SER	-	expression tag	UNP P14618
D	-7	SER	-	expression tag	UNP P14618
D	-6	GLY	-	expression tag	UNP P14618
D	-5	LEU	-	expression tag	UNP P14618
D	-4	VAL	-	expression tag	UNP P14618
D	-3	PRO	-	expression tag	UNP P14618
D	-2	ARG	-	expression tag	UNP P14618
D	-1	GLY	-	expression tag	UNP P14618
D	0	SER	-	expression tag	UNP P14618

- Molecule 2 is CHLORIDE ION (CCD ID: CL) (formula: Cl).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	C	1	Total Cl 1 1	0	0
2	A	1	Total Cl 1 1	0	0

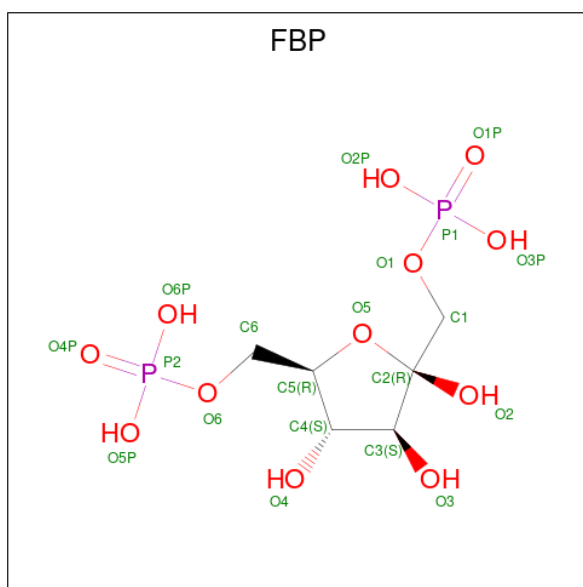
- Molecule 3 is POTASSIUM ION (CCD ID: K) (formula: K).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	C	1	Total K 1 1	0	0

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

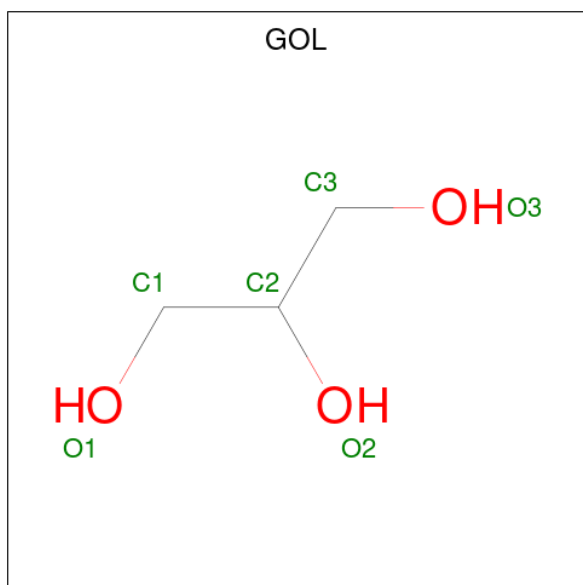
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	C	1	Total Mg 1 1	0	0
4	B	1	Total Mg 1 1	0	0

- Molecule 5 is 1,6-di-O-phosphono-beta-D-fructofuranose (CCD ID: FBP) (formula: C₆H₁₄O₁₂P₂).



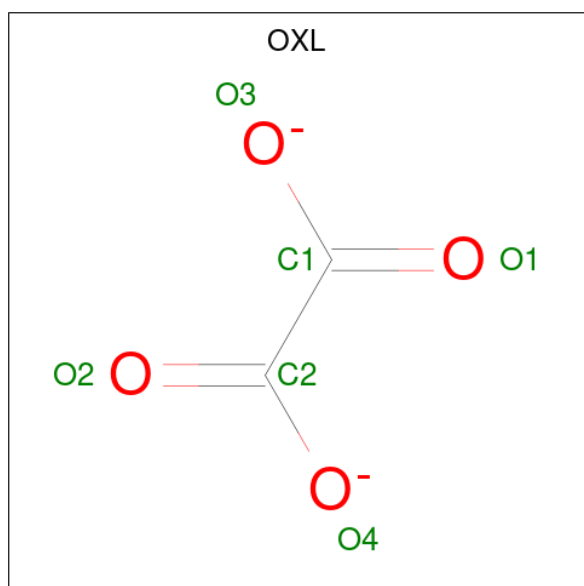
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	O	P		
5	C	1	Total	C	O	P	0	0
			20	6	12	2		
5	A	1	Total	C	O	P	0	0
			20	6	12	2		
5	B	1	Total	C	O	P	0	0
			20	6	12	2		
5	D	1	Total	C	O	P	0	0
			20	6	12	2		

- Molecule 6 is GLYCEROL (CCD ID: GOL) (formula: $C_3H_8O_3$).



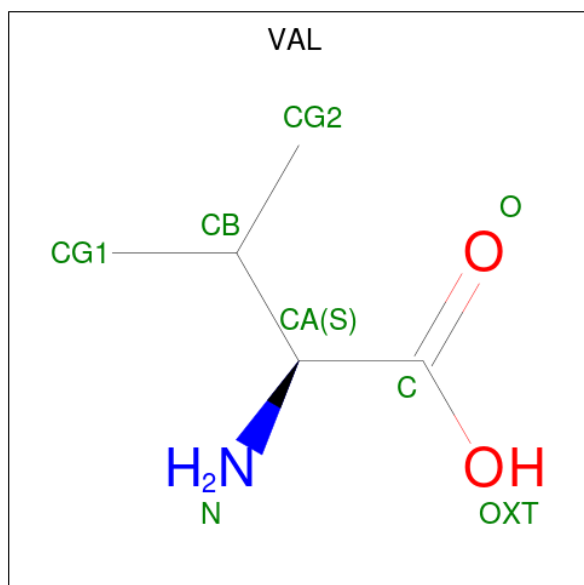
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	C	1	Total C O 6 3 3	0	0
6	C	1	Total C O 6 3 3	0	0
6	C	1	Total C O 6 3 3	0	0
6	C	1	Total C O 6 3 3	0	0
6	C	1	Total C O 6 3 3	0	0
6	A	1	Total C O 6 3 3	0	0
6	A	1	Total C O 6 3 3	0	0
6	B	1	Total C O 6 3 3	0	0
6	B	1	Total C O 6 3 3	0	0
6	D	1	Total C O 6 3 3	0	0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

- Molecule 7 is OXALATE ION (CCD ID: OXL) (formula: C_2O_4).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
7	C	1	Total C O 6 2 4	0	0
7	B	1	Total C O 6 2 4	0	0

- Molecule 8 is VALINE (CCD ID: VAL) (formula: C₅H₁₁NO₂) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
8	C	1	Total C N O 8 5 1 2	0	0
8	B	1	Total C N O 8 5 1 2	0	0

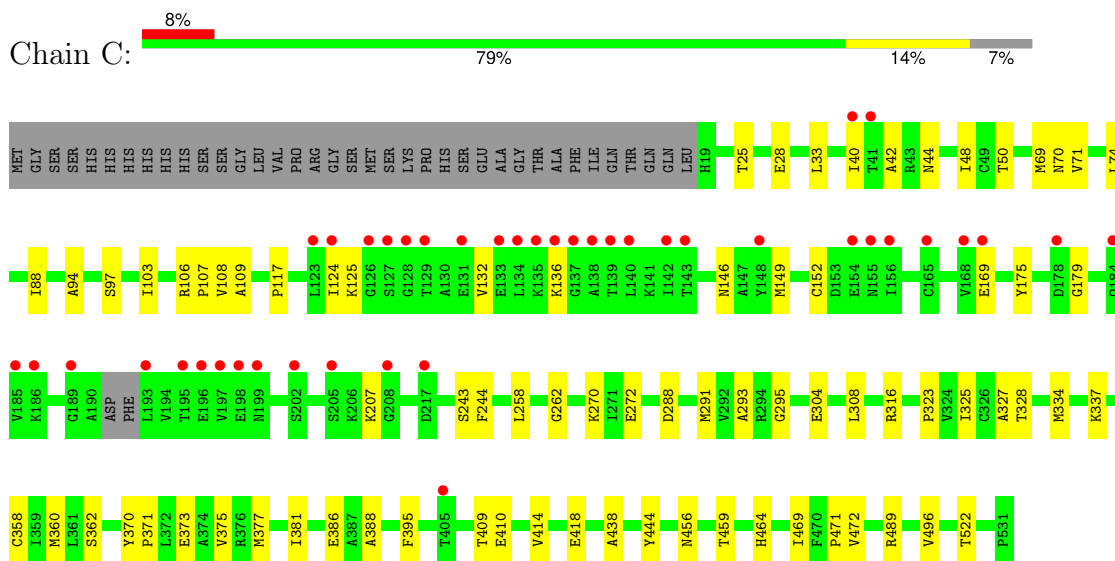
- Molecule 9 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
9	C	14	Total O 14 14	0	0
9	A	22	Total O 22 22	0	0
9	B	19	Total O 19 19	0	0
9	D	9	Total O 9 9	0	0

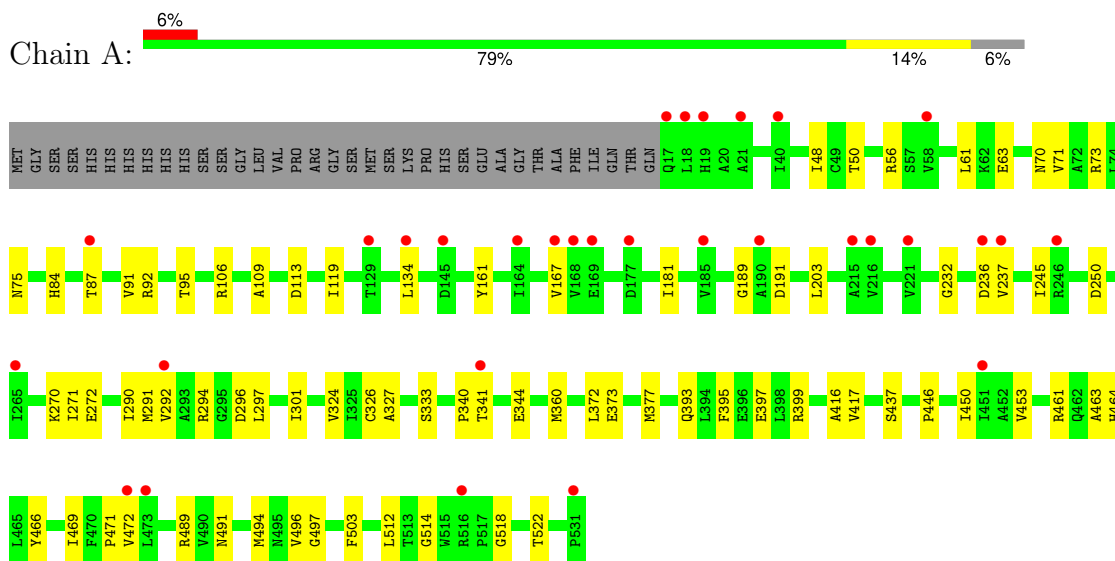
3 Residue-property plots [i](#)

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.

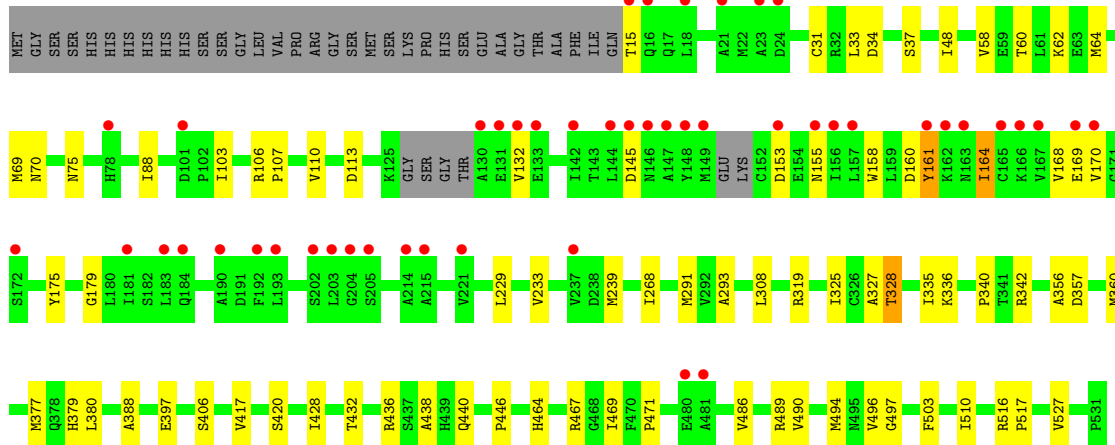
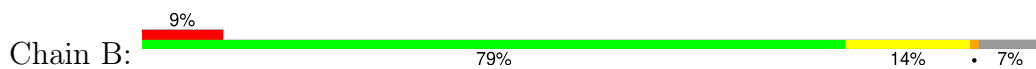
- Molecule 1: Pyruvate kinase PKM



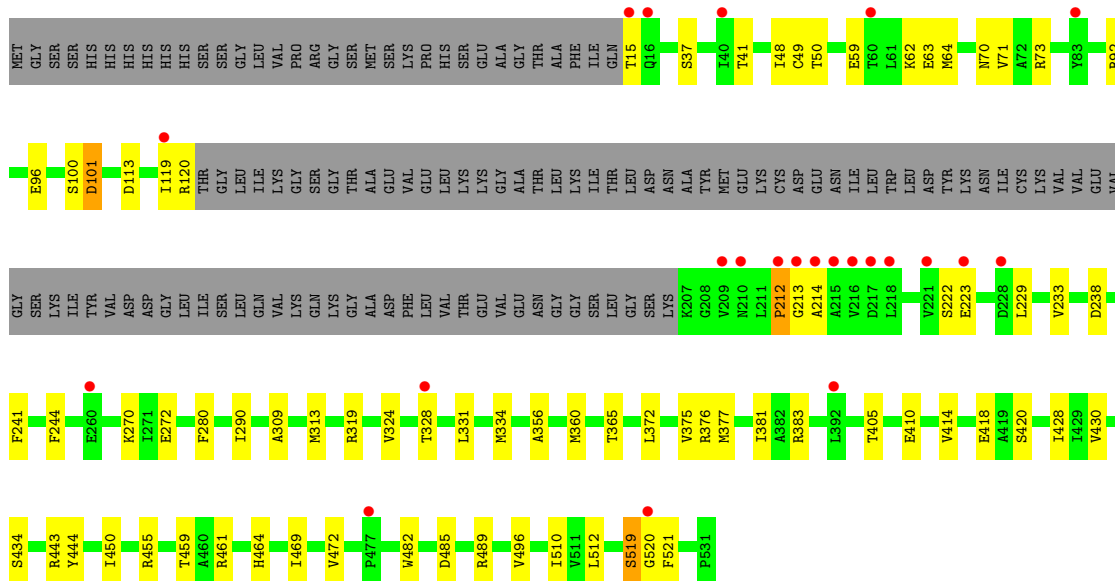
- Molecule 1: Pyruvate kinase PKM



- Molecule 1: Pyruvate kinase PKM



● Molecule 1: Pyruvate kinase PKM



4 Data and refinement statistics

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	81.04Å 154.98Å 91.96Å 90.00° 102.36° 90.00°	Depositor
Resolution (Å)	61.44 – 2.75 61.44 – 2.75	Depositor EDS
% Data completeness (in resolution range)	99.9 (61.44-2.75) 99.9 (61.44-2.75)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.08	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.60 (at 2.73Å)	Xtrriage
Refinement program	PHENIX 1.17.1_3660	Depositor
R, R_{free}	0.223 , 0.265 0.226 , 0.266	Depositor DCC
R_{free} test set	2783 reflections (4.83%)	wwPDB-VP
Wilson B-factor (Å ²)	52.2	Xtrriage
Anisotropy	0.344	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 49.7	EDS
L-test for twinning ²	$\langle L \rangle = 0.51$, $\langle L^2 \rangle = 0.34$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.93	EDS
Total number of atoms	14055	wwPDB-VP
Average B, all atoms (Å ²)	54.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.02% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.11	0/3619	0.32	0/4935
1	B	0.34	2/3608 (0.1%)	0.36	2/4912 (0.0%)
1	C	0.18	1/3690 (0.0%)	0.36	4/5016 (0.1%)
1	D	0.10	0/3123	0.31	0/4257
All	All	0.21	3/14040 (0.0%)	0.34	6/19120 (0.0%)

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	70	ASN	C-N	18.25	1.55	1.33
1	B	69	MET	C-N	6.74	1.44	1.33
1	C	291	MET	C-O	-5.36	1.18	1.24

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	169	GLU	N-CA-C	7.86	127.54	110.80
1	C	169	GLU	CB-CA-C	-6.17	98.13	110.42
1	B	164	ILE	CB-CA-C	-6.13	101.24	111.29
1	C	136	LYS	N-CA-C	-5.13	102.60	110.30
1	C	136	LYS	CB-CA-C	5.12	117.17	110.06
1	B	161	TYR	N-CA-C	-5.11	99.93	110.80

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3559	0	3176	53	0
1	B	3551	0	3214	56	0
1	C	3629	0	3397	49	0
1	D	3067	0	2860	43	0
2	A	1	0	0	0	0
2	C	1	0	0	0	0
3	C	1	0	0	0	0
4	B	1	0	0	0	0
4	C	1	0	0	0	0
5	A	20	0	10	3	0
5	B	20	0	10	2	0
5	C	20	0	10	1	0
5	D	20	0	10	3	0
6	A	12	0	16	2	0
6	B	12	0	16	2	0
6	C	30	0	40	0	0
6	D	18	0	24	1	0
7	B	6	0	0	2	0
7	C	6	0	0	1	0
8	B	8	0	8	1	0
8	C	8	0	8	0	0
9	A	22	0	0	0	0
9	B	19	0	0	1	0
9	C	14	0	0	0	0
9	D	9	0	0	0	0
All	All	14055	0	12799	193	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 7.

All (193) 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:C:304:GLU:HG2	1:B:380:LEU:HB3	1.55	0.89
1:B:420:SER:HB2	1:B:428:ILE:HD11	1.58	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:472:VAL:HG11	1:C:496:VAL:HG21	1.71	0.72
1:D:15:THR:O	1:D:37:SER:OG	2.08	0.72
1:B:293:ALA:HB1	7:B:605:OXL:O2	1.91	0.69
1:A:56:ARG:HD2	1:A:87:THR:HG22	1.74	0.69
1:B:106:ARG:NH2	1:B:471:PRO:O	2.26	0.69
1:B:164:ILE:O	1:B:168:VAL:N	2.24	0.68
1:A:56:ARG:HH11	1:A:87:THR:HG22	1.59	0.67
1:B:516:ARG:NH1	1:B:517:PRO:O	2.25	0.67
1:D:420:SER:HB3	1:D:428:ILE:HD11	1.76	0.67
1:D:472:VAL:HG11	1:D:496:VAL:HG11	1.77	0.67
1:D:519:SER:O	1:D:521:PHE:N	2.28	0.66
1:A:491:ASN:HA	1:A:494:MET:HE2	1.78	0.66
1:B:175:TYR:HB3	1:B:179:GLY:HA2	1.78	0.66
1:C:377:MET:HE3	1:C:381:ILE:HD11	1.78	0.66
1:C:272:GLU:HG2	1:C:293:ALA:HB3	1.81	0.62
1:A:340:PRO:HG3	1:A:377:MET:HG2	1.81	0.62
1:C:71:VAL:HG22	1:C:109:ALA:HB3	1.80	0.62
1:A:92:ARG:NH2	1:A:236:ASP:O	2.34	0.61
1:A:341:THR:HG22	1:A:344:GLU:H	1.66	0.61
1:C:124:ILE:HA	1:C:152:CYS:HB2	1.83	0.61
1:C:106:ARG:NH1	1:C:471:PRO:O	2.35	0.59
1:B:293:ALA:HB1	7:B:605:OXL:C2	2.32	0.58
1:B:428:ILE:HD13	1:B:510:ILE:HB	1.86	0.58
1:D:63:GLU:HB3	1:D:372:LEU:HD21	1.86	0.58
1:D:319:ARG:O	1:D:443:ARG:NH2	2.37	0.58
1:A:245:ILE:HG23	1:A:250:ASP:HB2	1.86	0.58
1:C:107:PRO:O	1:C:464:HIS:NE2	2.30	0.58
1:D:49:CYS:HB3	1:D:365:THR:HG21	1.85	0.58
1:C:40:ILE:HG13	1:C:42:ALA:H	1.67	0.57
1:B:106:ARG:NH1	8:B:606:VAL:O	2.38	0.57
1:D:48:ILE:HB	1:D:360:MET:HG3	1.87	0.56
1:B:510:ILE:HD13	1:B:527:VAL:HG12	1.86	0.56
1:A:417:VAL:HG13	1:A:446:PRO:HB3	1.87	0.56
1:B:340:PRO:HG3	1:B:377:MET:HG2	1.88	0.56
1:D:244:PHE:N	1:D:272:GLU:OE2	2.39	0.55
1:D:489:ARG:NH1	5:D:601:FBP:O3P	2.39	0.55
1:A:463:ALA:HB3	1:A:471:PRO:HB3	1.89	0.55
1:A:50:THR:OG1	1:A:73:ARG:NH1	2.34	0.54
1:D:482:TRP:HZ2	5:D:601:FBP:H12	1.72	0.54
1:A:437:SER:OG	1:A:522:THR:HG21	2.07	0.54
1:C:327:ALA:HB1	1:C:360:MET:HE2	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:489:ARG:NH1	5:B:602:FBP:O2P	2.40	0.53
1:A:453:VAL:HG11	1:A:489:ARG:HB3	1.90	0.53
1:C:489:ARG:NH2	5:C:604:FBP:O3P	2.33	0.53
1:D:100:SER:O	1:D:101:ASP:HB2	2.08	0.52
1:B:510:ILE:HD13	1:B:527:VAL:CG1	2.39	0.52
1:B:34:ASP:HB3	1:B:37:SER:HB2	1.92	0.52
1:C:175:TYR:HB3	1:C:179:GLY:HA2	1.92	0.52
1:C:243:SER:HA	1:C:270:LYS:HB2	1.93	0.51
1:A:91:VAL:O	1:A:95:THR:HG23	2.10	0.51
1:A:134:LEU:HD12	1:A:181:ILE:HD13	1.92	0.51
1:B:336:LYS:NZ	9:B:701:HOH:O	2.33	0.51
1:A:472:VAL:HG11	1:A:496:VAL:HG11	1.91	0.51
1:D:238:ASP:OD1	1:D:461:ARG:NE	2.41	0.51
1:D:41:THR:HA	1:D:383:ARG:HH11	1.76	0.51
1:C:409:THR:HG23	1:C:522:THR:HB	1.92	0.51
1:A:466:TYR:HB2	1:A:469:ILE:HD12	1.92	0.51
1:B:164:ILE:O	1:B:168:VAL:CB	2.59	0.51
1:A:292:VAL:HG13	1:A:294:ARG:HG3	1.91	0.51
1:C:146:ASN:ND2	1:C:149:MET:SD	2.84	0.51
1:B:510:ILE:CD1	1:B:527:VAL:HG12	2.40	0.51
1:C:371:PRO:O	1:C:375:VAL:HG23	2.12	0.50
1:C:70:ASN:HB3	1:C:464:HIS:ND1	2.26	0.50
1:A:75:ASN:HA	1:A:113:ASP:HB3	1.95	0.49
1:D:48:ILE:HG12	1:D:71:VAL:HB	1.95	0.49
1:D:428:ILE:HD13	1:D:510:ILE:HB	1.95	0.49
1:D:410:GLU:O	1:D:414:VAL:HG23	2.12	0.49
1:D:405:THR:HG21	1:D:410:GLU:HB3	1.94	0.48
1:C:25:THR:HB	1:B:397:GLU:HG2	1.95	0.48
1:C:304:GLU:H	1:C:304:GLU:CD	2.20	0.48
1:B:145:ASP:O	1:B:158:TRP:NE1	2.46	0.48
1:A:292:VAL:HG12	1:A:326:CYS:HA	1.96	0.48
1:B:406:SER:O	1:B:406:SER:OG	2.31	0.48
1:D:430:VAL:HG22	1:D:512:LEU:HB2	1.95	0.48
1:C:74:LEU:HD11	1:C:88:ILE:HG13	1.95	0.48
1:A:84:HIS:HA	1:A:87:THR:HG23	1.95	0.48
1:B:510:ILE:CD1	1:B:527:VAL:CG1	2.92	0.48
1:D:434:SER:HA	1:D:459:THR:HG21	1.95	0.48
1:A:50:THR:HA	1:A:73:ARG:HB3	1.96	0.48
1:B:335:ILE:HG22	1:B:336:LYS:HG2	1.96	0.47
1:B:417:VAL:HG13	1:B:446:PRO:HB3	1.96	0.47
1:A:189:GLY:C	1:A:191:ASP:H	2.22	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:418:GLU:OE1	6:D:604:GOL:O1	2.29	0.47
1:C:308:LEU:HD21	1:B:388:ALA:HB2	1.97	0.47
1:C:48:ILE:HG12	1:C:71:VAL:HB	1.95	0.47
1:C:50:THR:OG1	1:C:362:SER:HA	2.15	0.47
1:C:258:LEU:HB3	1:C:262:GLY:HA3	1.97	0.47
1:C:414:VAL:HG22	1:C:444:TYR:CZ	2.50	0.47
1:B:497:GLY:HA3	1:B:503:PHE:CZ	2.50	0.47
1:A:333:SER:HB3	1:A:344:GLU:OE1	2.14	0.47
1:B:432:THR:HA	5:B:602:FBP:H61	1.96	0.47
1:C:370:TYR:HB3	1:C:373:GLU:HB2	1.96	0.46
1:A:450:ILE:HB	1:A:469:ILE:HA	1.97	0.46
1:B:60:THR:O	1:B:64:MET:HG3	2.15	0.46
1:B:417:VAL:HA	1:B:420:SER:HB3	1.97	0.46
1:D:377:MET:O	1:D:381:ILE:HG13	2.16	0.46
1:C:308:LEU:HD23	1:B:33:LEU:HD13	1.98	0.46
1:A:271:ILE:HD11	1:A:290:ILE:HD12	1.97	0.46
1:D:70:ASN:HB3	1:D:464:HIS:CG	2.50	0.46
1:A:514:GLY:HA2	1:A:522:THR:HA	1.96	0.46
1:D:331:LEU:HB3	1:D:334:MET:HG3	1.98	0.46
1:C:316:ARG:HG2	1:B:31:CYS:HB3	1.98	0.46
1:A:70:ASN:HB3	1:A:464:HIS:CG	2.51	0.46
1:D:455:ARG:NH2	1:D:485:ASP:OD1	2.40	0.46
1:D:519:SER:O	5:D:601:FBP:O4	2.29	0.46
1:A:341:THR:HB	1:A:344:GLU:CD	2.41	0.45
1:A:416:ALA:HB2	1:A:512:LEU:HD11	1.99	0.45
1:D:222:SER:OG	1:D:223:GLU:N	2.49	0.45
1:C:295:GLY:O	1:B:342:ARG:NH1	2.50	0.45
1:A:270:LYS:HG2	1:A:291:MET:HB3	1.99	0.45
1:B:103:ILE:HG23	1:B:496:VAL:HG12	1.98	0.45
1:A:518:GLY:O	5:A:602:FBP:O4	2.26	0.44
1:C:293:ALA:HB1	7:C:610:OXL:C1	2.47	0.44
1:C:410:GLU:O	1:C:414:VAL:HG23	2.18	0.44
1:C:456:ASN:HB3	1:C:459:THR:HB	1.98	0.44
1:A:395:PHE:CZ	1:A:399:ARG:HD3	2.53	0.44
1:D:212:PRO:O	1:D:214:ALA:N	2.50	0.44
1:C:44:ASN:H	1:C:386:GLU:CD	2.26	0.44
1:C:28:GLU:OE1	1:B:319:ARG:NH1	2.51	0.44
1:C:94:ALA:O	1:C:97:SER:HB3	2.18	0.44
1:A:489:ARG:NH1	5:A:602:FBP:O3P	2.48	0.44
1:C:288:ASP:O	1:C:323:PRO:HD2	2.17	0.44
1:A:272:GLU:HB3	1:A:296:ASP:HB2	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:309:ALA:HB1	1:D:313:MET:HE2	2.00	0.44
1:A:497:GLY:HA3	1:A:503:PHE:CZ	2.53	0.43
1:B:436:ARG:O	1:B:440:GLN:HG3	2.17	0.43
1:D:241:PHE:HB3	1:D:270:LYS:HD2	2.00	0.43
1:C:103:ILE:HG23	1:C:496:VAL:HG12	1.99	0.43
1:A:106:ARG:HA	1:A:106:ARG:HD3	1.76	0.43
1:A:393:GLN:O	1:A:397:GLU:HG3	2.18	0.43
1:C:207:LYS:HD3	1:C:207:LYS:HA	1.76	0.43
1:D:50:THR:OG1	1:D:73:ARG:NH1	2.40	0.43
1:D:59:GLU:HA	1:D:62:LYS:HD3	2.00	0.43
1:A:514:GLY:CA	1:A:522:THR:HA	2.48	0.43
1:C:69:MET:HE3	1:C:108:VAL:HG11	2.01	0.43
1:A:119:ILE:HG23	1:A:161:TYR:HB2	2.00	0.43
1:B:107:PRO:O	1:B:464:HIS:NE2	2.43	0.43
1:D:290:ILE:O	1:D:324:VAL:HA	2.19	0.43
1:A:134:LEU:HD11	1:A:203:LEU:HD22	2.00	0.43
1:A:232:GLY:O	1:A:237:VAL:HG22	2.18	0.43
1:B:48:ILE:HB	1:B:360:MET:HG3	2.00	0.43
1:B:379:HIS:CE1	6:B:603:GOL:H2	2.54	0.43
1:D:113:ASP:HA	1:D:241:PHE:HB2	1.99	0.43
1:A:71:VAL:HG22	1:A:109:ALA:HB3	2.01	0.42
1:C:388:ALA:HB2	1:B:308:LEU:HD21	2.00	0.42
1:A:63:GLU:HB3	1:A:372:LEU:HD21	2.01	0.42
1:B:75:ASN:HA	1:B:113:ASP:HB3	2.00	0.42
1:A:290:ILE:O	1:A:324:VAL:HA	2.19	0.42
1:C:438:ALA:HB1	1:C:469:ILE:HD13	2.00	0.42
1:A:514:GLY:HA3	5:A:602:FBP:O3	2.19	0.42
1:D:280:PHE:HE1	1:D:290:ILE:HG21	1.84	0.42
1:A:109:ALA:HB2	1:A:461:ARG:HB3	2.01	0.42
1:A:327:ALA:HB1	1:A:360:MET:HE2	2.02	0.42
1:B:88:ILE:HG12	1:B:110:VAL:HG11	2.02	0.42
1:B:291:MET:HE2	1:B:325:ILE:HG21	2.02	0.42
1:D:324:VAL:HG13	1:D:356:ALA:HA	2.01	0.42
1:B:239:MET:HE2	1:B:239:MET:HB3	1.88	0.42
1:B:356:ALA:O	1:B:467:ARG:NH2	2.36	0.42
1:D:119:ILE:C	1:D:120:ARG:HG2	2.45	0.42
1:D:414:VAL:HG22	1:D:444:TYR:CE2	2.55	0.42
1:C:395:PHE:HE2	1:C:418:GLU:HG2	1.84	0.42
1:A:48:ILE:HG12	1:A:71:VAL:HB	2.00	0.42
1:C:325:ILE:HG12	1:C:358:CYS:HB2	2.01	0.42
1:B:327:ALA:O	1:B:328:THR:OG1	2.36	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:229:LEU:O	1:B:233:VAL:HG23	2.20	0.41
1:B:486:VAL:HG12	1:B:489:ARG:NH2	2.35	0.41
1:C:414:VAL:HG22	1:C:444:TYR:CE2	2.55	0.41
1:A:373:GLU:OE1	6:A:604:GOL:O3	2.37	0.41
1:D:450:ILE:HB	1:D:469:ILE:HA	2.02	0.41
1:D:92:ARG:O	1:D:96:GLU:HG2	2.21	0.41
1:D:229:LEU:O	1:D:233:VAL:HG23	2.21	0.41
1:C:125:LYS:N	1:C:152:CYS:O	2.46	0.41
1:C:334:MET:HA	1:C:337:LYS:O	2.20	0.41
1:A:70:ASN:HB3	1:A:464:HIS:ND1	2.35	0.41
1:D:372:LEU:O	1:D:376:ARG:HG3	2.20	0.41
1:A:297:LEU:O	1:A:301:ILE:HG12	2.20	0.41
1:C:33:LEU:HD23	1:C:33:LEU:HA	1.91	0.41
1:A:61:LEU:HD13	1:A:91:VAL:HA	2.02	0.41
1:A:372:LEU:HD12	6:A:604:GOL:H31	2.02	0.41
1:B:490:VAL:O	1:B:494:MET:HG2	2.21	0.41
1:B:160:ASP:O	1:B:161:TYR:C	2.63	0.41
1:D:64:MET:HE3	1:D:375:VAL:HG21	2.03	0.41
1:B:357:ASP:HA	1:B:467:ARG:HB2	2.03	0.40
1:C:50:THR:HG1	1:C:362:SER:HA	1.86	0.40
1:C:117:PRO:HD2	1:C:244:PHE:HB2	2.03	0.40
1:B:58:VAL:O	1:B:62:LYS:HG3	2.22	0.40
1:B:379:HIS:NE2	6:B:603:GOL:H2	2.37	0.40
1:B:153:ASP:OD1	1:B:155:ASN:N	2.54	0.40
1:B:268:ILE:HG21	1:B:325:ILE:HD12	2.04	0.40
1:B:15:THR:HB	1:B:37:SER:OG	2.22	0.40
1:B:438:ALA:HB1	1:B:469:ILE:HD13	2.03	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	513/550 (93%)	491 (96%)	21 (4%)	1 (0%)	43	64
1	B	505/550 (92%)	471 (93%)	30 (6%)	4 (1%)	16	30
1	C	507/550 (92%)	482 (95%)	23 (4%)	2 (0%)	30	50
1	D	427/550 (78%)	408 (96%)	13 (3%)	6 (1%)	9	17
All	All	1952/2200 (89%)	1852 (95%)	87 (4%)	13 (1%)	18	34

All (13) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	132	VAL
1	B	170	VAL
1	D	101	ASP
1	D	213	GLY
1	D	520	GLY
1	C	328	THR
1	A	167	VAL
1	B	169	GLU
1	D	212	PRO
1	D	328	THR
1	B	328	THR
1	D	519	SER
1	B	132	VAL

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	307/452 (68%)	307 (100%)	0	100	100
1	B	305/452 (68%)	305 (100%)	0	100	100
1	C	329/452 (73%)	329 (100%)	0	100	100
1	D	282/452 (62%)	282 (100%)	0	100	100
All	All	1223/1808 (68%)	1223 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

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

Mol	Chain	Res	Type
1	C	78	HIS
1	C	235	GLN
1	C	458	GLN
1	C	479	GLN
1	A	318	ASN
1	A	458	GLN
1	B	440	GLN
1	D	19	HIS

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 25 ligands modelled in this entry, 5 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$
5	FBP	A	602	-	18,20,20	0.92	1 (5%)	21,32,32	0.64	0
6	GOL	C	605	-	5,5,5	0.93	0	5,5,5	1.08	0
8	VAL	C	611	-	6,7,7	0.95	1 (16%)	8,9,9	1.67	2 (25%)
6	GOL	C	608	-	5,5,5	0.93	0	5,5,5	1.06	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
8	VAL	B	606	-	6,7,7	0.95	1 (16%)	8,9,9	1.21	2 (25%)
6	GOL	C	607	-	5,5,5	0.93	0	5,5,5	1.05	0
5	FBP	D	601	-	18,20,20	0.92	1 (5%)	21,32,32	0.69	0
5	FBP	C	604	-	18,20,20	0.94	1 (5%)	21,32,32	0.68	0
6	GOL	B	604	-	5,5,5	0.93	0	5,5,5	1.07	0
6	GOL	A	604	-	5,5,5	0.95	0	5,5,5	1.09	0
6	GOL	D	603	-	5,5,5	0.92	0	5,5,5	1.11	0
7	OXL	B	605	4	5,5,5	1.72	2 (40%)	6,6,6	1.69	2 (33%)
5	FBP	B	602	-	18,20,20	0.97	1 (5%)	21,32,32	0.71	0
6	GOL	D	602	-	5,5,5	0.95	0	5,5,5	1.06	0
6	GOL	A	603	-	5,5,5	0.95	0	5,5,5	1.04	0
7	OXL	C	610	4	5,5,5	1.72	2 (40%)	6,6,6	1.69	2 (33%)
6	GOL	B	603	-	5,5,5	0.94	0	5,5,5	1.05	0
6	GOL	C	606	-	5,5,5	0.87	0	5,5,5	1.11	1 (20%)
6	GOL	C	609	-	5,5,5	0.94	0	5,5,5	1.08	0
6	GOL	D	604	-	5,5,5	0.92	0	5,5,5	1.08	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
5	FBP	A	602	-	-	3/13/32/32	0/1/1/1
6	GOL	C	605	-	-	2/4/4/4	-
8	VAL	C	611	-	-	0/8/8/8	-
6	GOL	C	608	-	-	0/4/4/4	-
8	VAL	B	606	-	-	0/8/8/8	-
6	GOL	C	607	-	-	2/4/4/4	-
5	FBP	D	601	-	-	7/13/32/32	0/1/1/1
5	FBP	C	604	-	-	10/13/32/32	0/1/1/1
6	GOL	B	604	-	-	2/4/4/4	-
6	GOL	A	604	-	-	2/4/4/4	-
6	GOL	D	603	-	-	0/4/4/4	-
7	OXL	B	605	4	-	4/4/4/4	-
5	FBP	B	602	-	-	5/13/32/32	0/1/1/1
6	GOL	D	602	-	-	0/4/4/4	-
6	GOL	A	603	-	-	2/4/4/4	-
7	OXL	C	610	4	-	4/4/4/4	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	GOL	B	603	-	-	0/4/4/4	-
6	GOL	C	606	-	-	2/4/4/4	-
6	GOL	C	609	-	-	0/4/4/4	-
6	GOL	D	604	-	-	0/4/4/4	-

All (10) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	B	602	FBP	O2-C2	2.80	1.45	1.40
5	C	604	FBP	O2-C2	2.73	1.45	1.40
5	D	601	FBP	O2-C2	2.72	1.45	1.40
5	A	602	FBP	O2-C2	2.70	1.45	1.40
7	C	610	OXL	O4-C2	-2.62	1.23	1.30
7	B	605	OXL	O4-C2	-2.61	1.23	1.30
7	B	605	OXL	O3-C1	-2.61	1.23	1.30
7	C	610	OXL	O3-C1	-2.60	1.23	1.30
8	B	606	VAL	OXT-C	-2.19	1.23	1.30
8	C	611	VAL	OXT-C	-2.14	1.23	1.30

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	C	611	VAL	OXT-C-O	-3.25	116.70	124.08
8	C	611	VAL	OXT-C-CA	2.91	124.17	114.15
8	B	606	VAL	OXT-C-O	-2.62	118.14	124.08
8	B	606	VAL	OXT-C-CA	2.15	121.58	114.15
7	C	610	OXL	O4-C2-C1	2.11	116.92	112.83
7	B	605	OXL	O4-C2-C1	2.10	116.91	112.83
7	C	610	OXL	O3-C1-C2	2.10	116.89	112.83
7	B	605	OXL	O3-C1-C2	2.09	116.88	112.83
6	C	606	GOL	C3-C2-C1	-2.02	104.39	111.80

There are no chirality outliers.

All (45) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	C	604	FBP	C1-O1-P1-O1P
5	C	604	FBP	C1-O1-P1-O2P
5	C	604	FBP	C1-O1-P1-O3P
5	C	604	FBP	C6-O6-P2-O4P
5	C	604	FBP	C6-O6-P2-O5P

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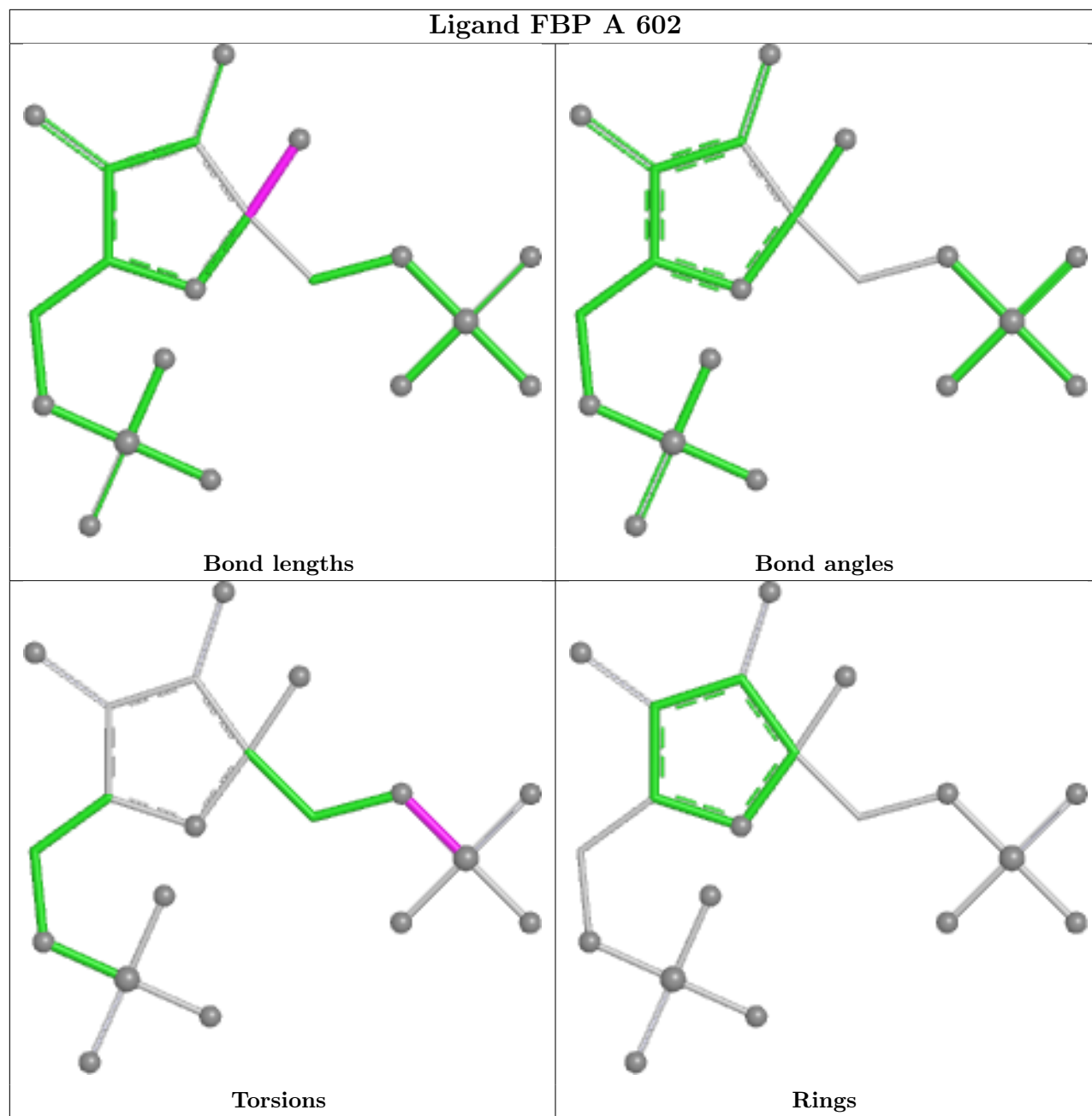
Mol	Chain	Res	Type	Atoms
5	C	604	FBP	C6-O6-P2-O6P
5	A	602	FBP	C1-O1-P1-O2P
5	A	602	FBP	C1-O1-P1-O3P
5	B	602	FBP	O1-C1-C2-O2
5	B	602	FBP	O1-C1-C2-C3
5	B	602	FBP	O1-C1-C2-O5
5	D	601	FBP	O1-C1-C2-O2
5	D	601	FBP	O1-C1-C2-O5
5	D	601	FBP	C4-C5-C6-O6
5	D	601	FBP	C6-O6-P2-O5P
5	D	601	FBP	C6-O6-P2-O6P
6	C	607	GOL	O1-C1-C2-C3
6	A	604	GOL	O1-C1-C2-C3
6	B	604	GOL	O1-C1-C2-C3
5	C	604	FBP	C4-C5-C6-O6
5	B	602	FBP	C4-C5-C6-O6
5	B	602	FBP	O5-C5-C6-O6
5	D	601	FBP	O5-C5-C6-O6
6	C	605	GOL	C1-C2-C3-O3
6	A	603	GOL	O1-C1-C2-C3
6	C	607	GOL	O1-C1-C2-O2
6	A	604	GOL	O1-C1-C2-O2
5	C	604	FBP	O5-C5-C6-O6
6	A	603	GOL	O1-C1-C2-O2
6	B	604	GOL	O1-C1-C2-O2
5	A	602	FBP	C1-O1-P1-O1P
5	D	601	FBP	C6-O6-P2-O4P
6	C	605	GOL	O2-C2-C3-O3
6	C	606	GOL	O1-C1-C2-O2
7	C	610	OXL	O3-C1-C2-O4
7	B	605	OXL	O3-C1-C2-O4
7	C	610	OXL	O1-C1-C2-O2
7	B	605	OXL	O1-C1-C2-O2
5	C	604	FBP	O1-C1-C2-O5
5	C	604	FBP	O1-C1-C2-O2
6	C	606	GOL	O1-C1-C2-C3
7	C	610	OXL	O1-C1-C2-O4
7	C	610	OXL	O3-C1-C2-O2
7	B	605	OXL	O1-C1-C2-O4
7	B	605	OXL	O3-C1-C2-O2

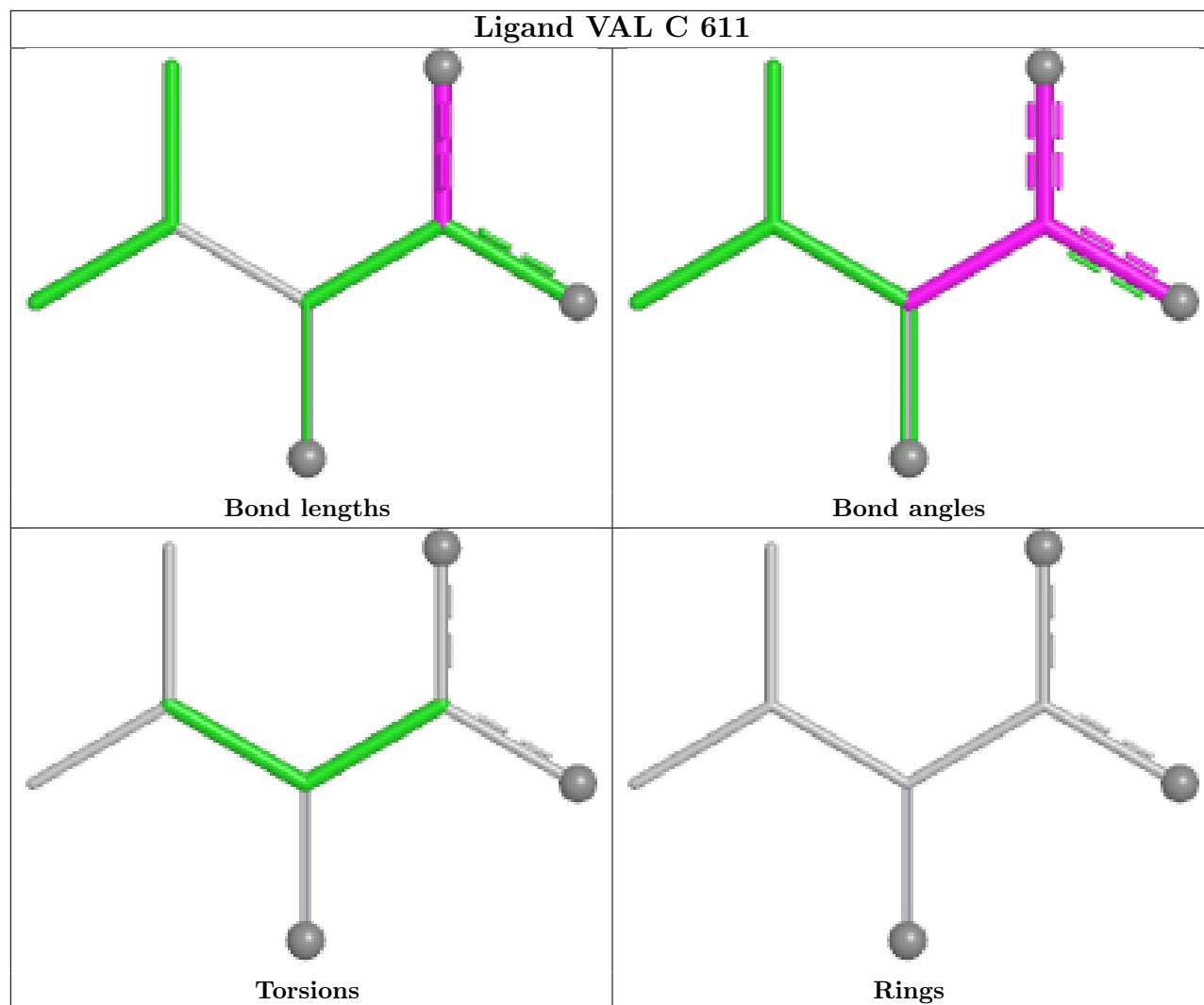
There are no ring outliers.

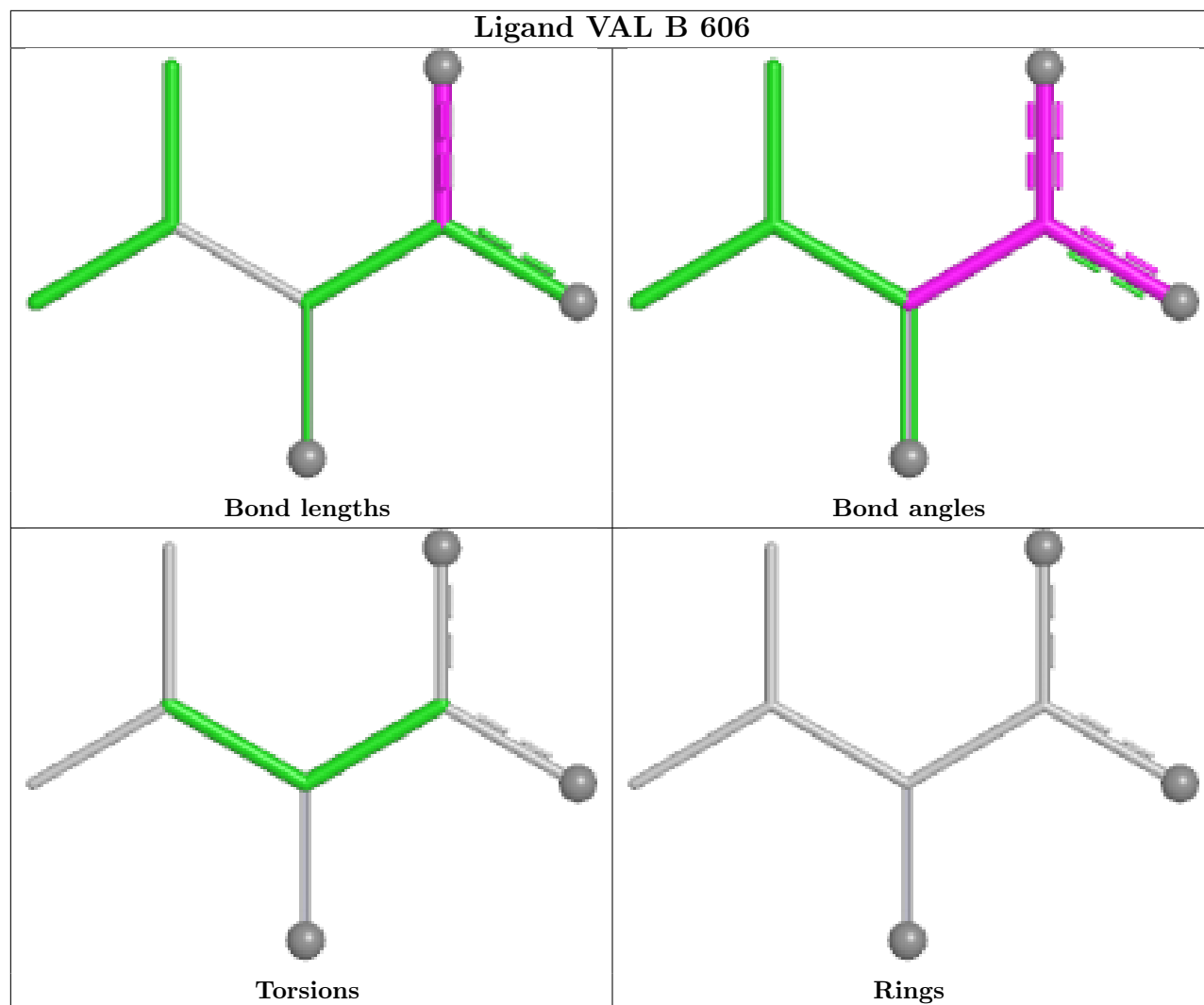
10 monomers are involved in 18 short contacts:

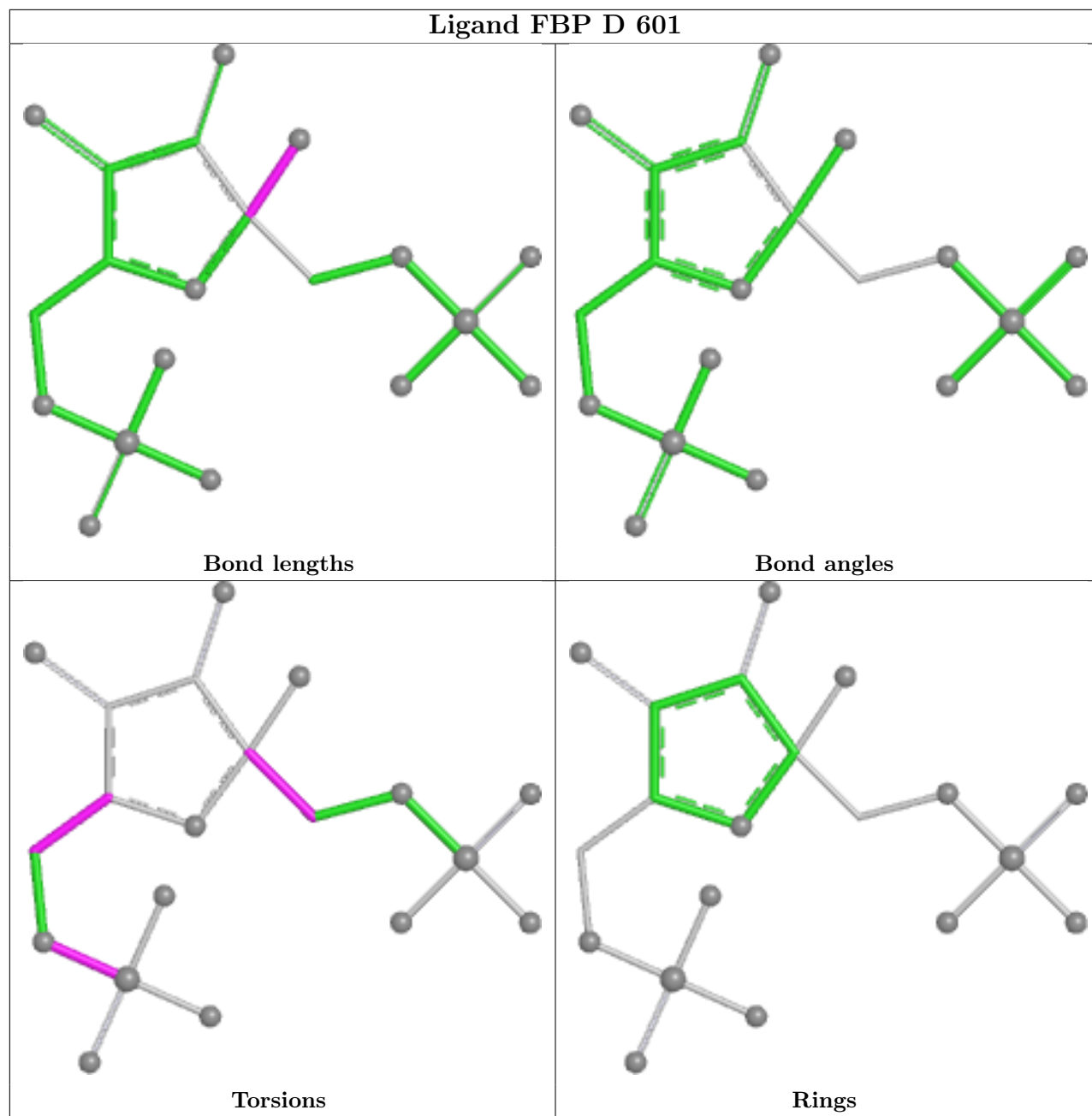
Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	A	602	FBP	3	0
8	B	606	VAL	1	0
5	D	601	FBP	3	0
5	C	604	FBP	1	0
6	A	604	GOL	2	0
7	B	605	OXL	2	0
5	B	602	FBP	2	0
7	C	610	OXL	1	0
6	B	603	GOL	2	0
6	D	604	GOL	1	0

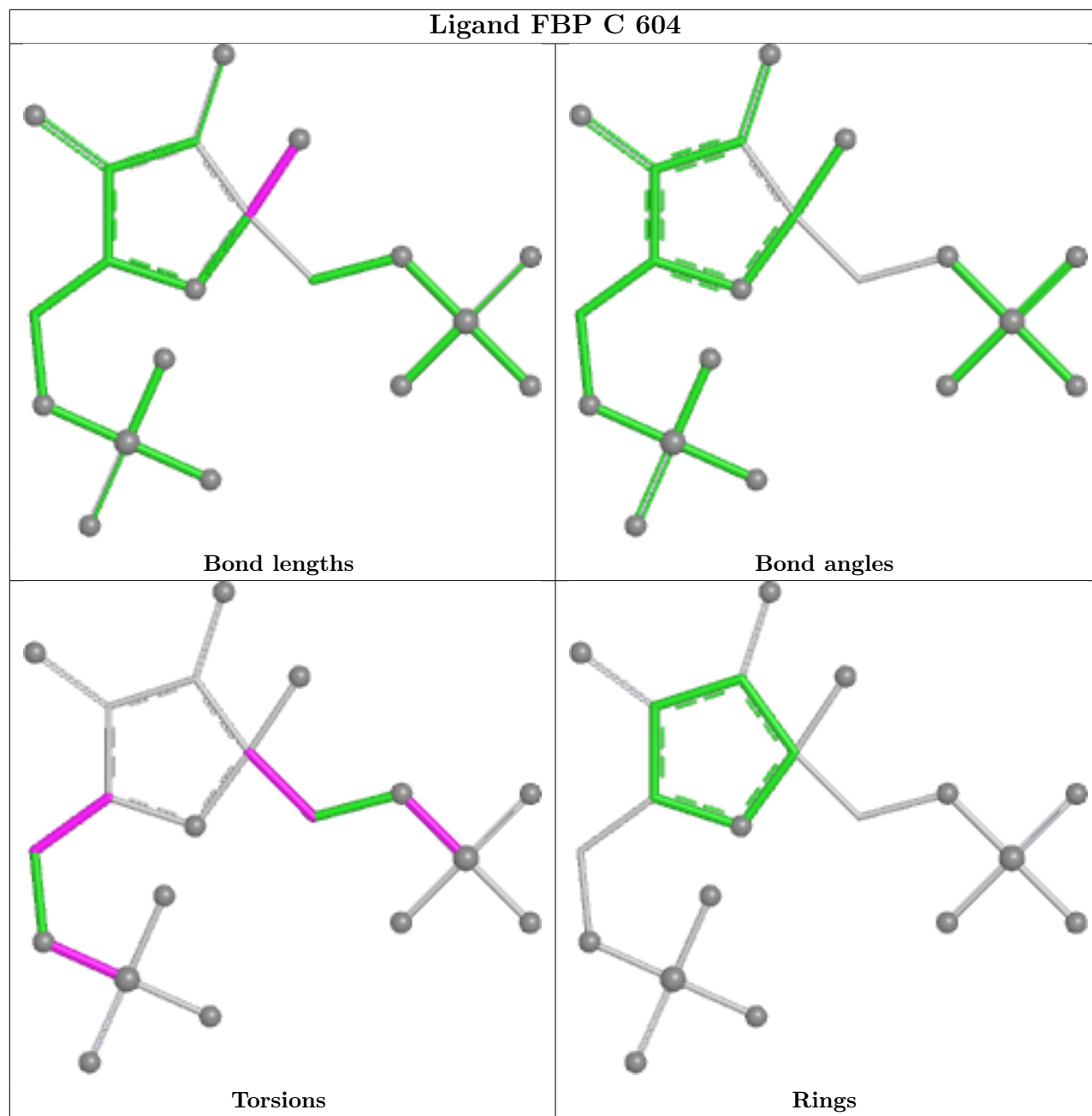
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

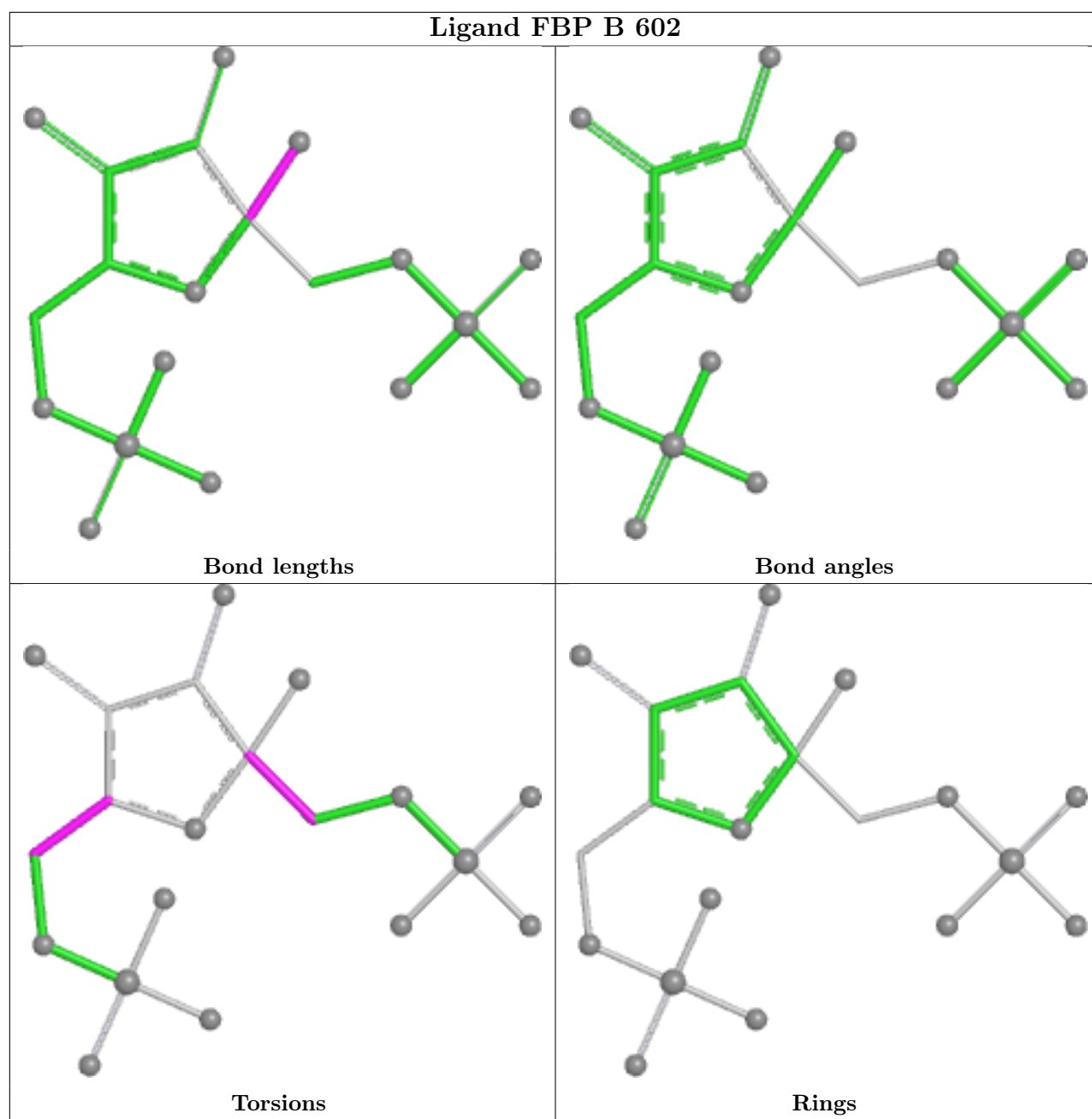












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 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	515/550 (93%)	0.72	31 (6%) 27 28	37, 57, 79, 95	0
1	B	511/550 (92%)	0.68	48 (9%) 14 13	34, 50, 96, 115	0
1	C	511/550 (92%)	0.48	42 (8%) 17 18	30, 44, 87, 100	0
1	D	431/550 (78%)	0.53	23 (5%) 32 31	37, 53, 76, 107	0
All	All	1968/2200 (89%)	0.61	144 (7%) 21 21	30, 52, 87, 115	0

All (144) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	145	ASP	4.7
1	B	161	TYR	4.4
1	A	145	ASP	4.3
1	C	168	VAL	4.1
1	B	148	TYR	4.1
1	A	341	THR	4.1
1	C	138	ALA	4.1
1	C	41	THR	4.1
1	C	208	GLY	4.0
1	B	202	SER	3.9
1	C	189	GLY	3.9
1	C	185	VAL	3.8
1	B	132	VAL	3.6
1	C	148	TYR	3.6
1	C	136	LYS	3.6
1	C	202	SER	3.6
1	B	131	GLU	3.5
1	B	130	ALA	3.5
1	B	172	SER	3.4
1	B	21	ALA	3.3
1	B	162	LYS	3.3

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Mol	Chain	Res	Type	RSRZ
1	D	119	ILE	3.3
1	C	193	LEU	3.3
1	C	165	CYS	3.2
1	C	131	GLU	3.2
1	C	198	GLU	3.2
1	A	292	VAL	3.1
1	D	215	ALA	3.1
1	C	196	GLU	3.1
1	C	142	ILE	3.1
1	D	217	ASP	3.1
1	B	144	LEU	3.0
1	C	169	GLU	3.0
1	C	143	THR	3.0
1	C	127	SER	3.0
1	C	154	GLU	3.0
1	B	24	ASP	3.0
1	A	168	VAL	3.0
1	B	192	PHE	3.0
1	C	197	VAL	2.9
1	A	237	VAL	2.9
1	D	210	ASN	2.9
1	A	21	ALA	2.9
1	B	23	ALA	2.8
1	B	215	ALA	2.8
1	B	167	VAL	2.8
1	B	149	MET	2.8
1	A	40	ILE	2.8
1	B	203	LEU	2.8
1	D	213	GLY	2.8
1	A	185	VAL	2.8
1	B	190	ALA	2.8
1	C	124	ILE	2.7
1	C	155	ASN	2.7
1	C	133	GLU	2.7
1	A	246	ARG	2.7
1	B	155	ASN	2.7
1	A	169	GLU	2.7
1	A	167	VAL	2.7
1	D	15	THR	2.7
1	C	40	ILE	2.6
1	B	169	GLU	2.6
1	B	205	SER	2.6

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Mol	Chain	Res	Type	RSRZ
1	A	265	ILE	2.6
1	B	142	ILE	2.6
1	B	146	ASN	2.6
1	C	178	ASP	2.5
1	A	164	ILE	2.5
1	C	123	LEU	2.5
1	C	128	GLY	2.5
1	B	170	VAL	2.5
1	C	137	GLY	2.5
1	A	472	VAL	2.5
1	B	237	VAL	2.5
1	B	147	ALA	2.5
1	B	481	ALA	2.5
1	C	140	LEU	2.4
1	B	133	GLU	2.4
1	A	451	ILE	2.4
1	B	16	GLN	2.4
1	D	209	VAL	2.4
1	A	134	LEU	2.4
1	D	218	LEU	2.4
1	B	163	ASN	2.4
1	C	217	ASP	2.4
1	A	221	VAL	2.4
1	D	40	ILE	2.4
1	A	190	ALA	2.4
1	A	19	HIS	2.3
1	C	205	SER	2.3
1	B	165	CYS	2.3
1	D	221	VAL	2.3
1	D	328	THR	2.3
1	C	199	ASN	2.3
1	C	186	LYS	2.3
1	C	184	GLN	2.3
1	B	18	LEU	2.3
1	C	129	THR	2.3
1	B	15	THR	2.3
1	C	135	LYS	2.3
1	C	156	ILE	2.3
1	D	214	ALA	2.3
1	C	139	THR	2.3
1	A	236	ASP	2.3
1	A	531	PRO	2.3

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Mol	Chain	Res	Type	RSRZ
1	B	153	ASP	2.3
1	A	17	GLN	2.3
1	D	216	VAL	2.3
1	B	193	LEU	2.2
1	B	166	LYS	2.2
1	B	181	ILE	2.2
1	D	477	PRO	2.2
1	A	216	VAL	2.2
1	B	480	GLU	2.2
1	C	134	LEU	2.2
1	B	101	ASP	2.2
1	D	60	THR	2.2
1	A	516	ARG	2.2
1	B	183	LEU	2.2
1	B	221	VAL	2.1
1	A	129	THR	2.1
1	A	473	LEU	2.1
1	B	157	LEU	2.1
1	D	392	LEU	2.1
1	B	78	HIS	2.1
1	A	58	VAL	2.1
1	A	215	ALA	2.1
1	B	214	ALA	2.1
1	C	195	THR	2.1
1	C	405	THR	2.1
1	D	83	TYR	2.1
1	D	228	ASP	2.1
1	D	260	GLU	2.1
1	D	212	PRO	2.1
1	B	184	GLN	2.1
1	D	16	GLN	2.1
1	B	204	GLY	2.1
1	B	156	ILE	2.1
1	A	87	THR	2.0
1	D	520	GLY	2.0
1	A	177	ASP	2.0
1	D	223	GLU	2.0
1	A	18	LEU	2.0
1	C	126	GLY	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.

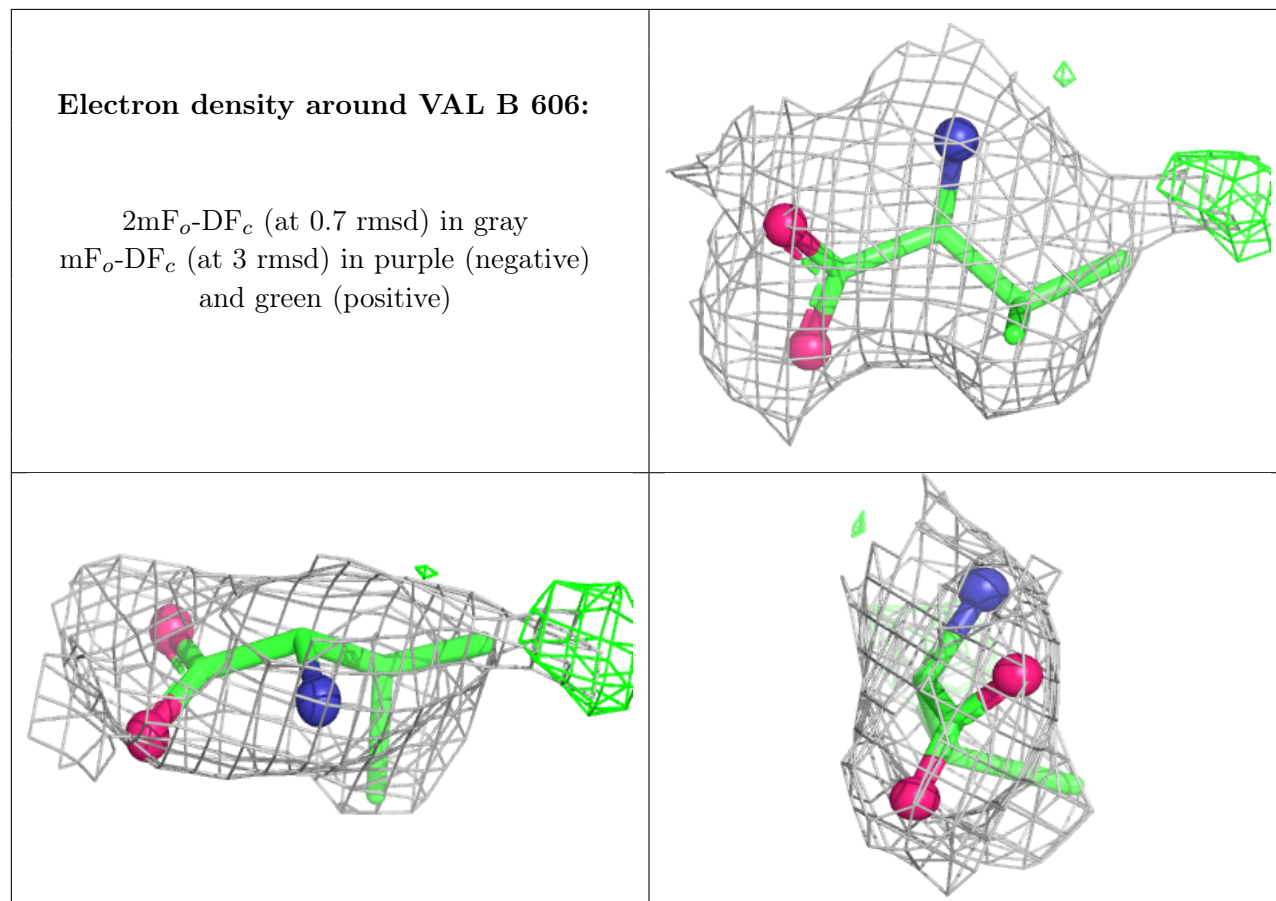
6.4 Ligands [i](#)

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(Å ²)	Q<0.9
6	GOL	C	605	6/6	0.64	0.20	54,62,70,71	0
6	GOL	D	602	6/6	0.64	0.20	63,73,79,83	0
6	GOL	C	608	6/6	0.67	0.20	47,58,59,61	0
6	GOL	B	604	6/6	0.71	0.12	72,74,75,75	0
6	GOL	A	604	6/6	0.72	0.15	58,66,70,73	0
6	GOL	C	609	6/6	0.74	0.18	52,54,58,60	0
6	GOL	C	607	6/6	0.75	0.15	52,56,65,73	0
6	GOL	D	603	6/6	0.77	0.16	62,69,71,74	0
6	GOL	A	603	6/6	0.79	0.19	62,67,68,72	0
8	VAL	B	606	8/8	0.81	0.18	43,48,57,62	0
6	GOL	D	604	6/6	0.86	0.14	58,62,63,68	0
8	VAL	C	611	8/8	0.86	0.17	44,45,51,51	0
6	GOL	B	603	6/6	0.86	0.14	47,52,57,59	0
7	OXL	B	605	6/6	0.89	0.12	52,53,61,66	0
7	OXL	C	610	6/6	0.91	0.10	36,39,48,52	0
6	GOL	C	606	6/6	0.91	0.12	41,49,56,67	0
5	FBP	A	602	20/20	0.92	0.10	44,54,67,69	0
5	FBP	D	601	20/20	0.92	0.09	49,56,67,73	0
5	FBP	B	602	20/20	0.93	0.10	39,51,62,70	0
5	FBP	C	604	20/20	0.93	0.10	42,51,56,58	0
4	MG	B	601	1/1	0.93	0.10	60,60,60,60	0
3	K	C	602	1/1	0.96	0.14	50,50,50,50	0
2	CL	A	601	1/1	0.97	0.10	53,53,53,53	0
4	MG	C	603	1/1	0.98	0.10	39,39,39,39	0
2	CL	C	601	1/1	0.98	0.03	39,39,39,39	0

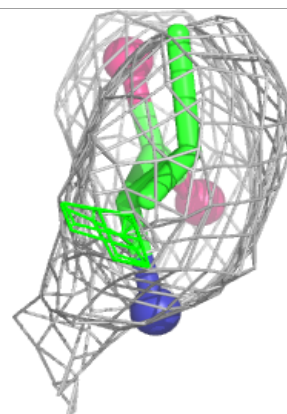
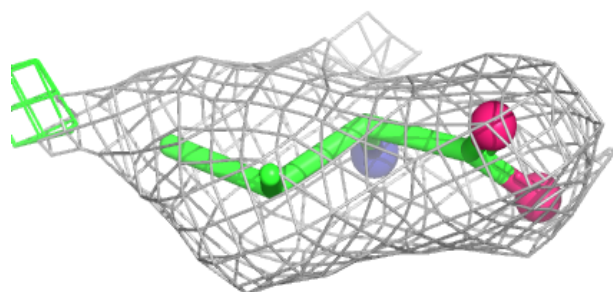
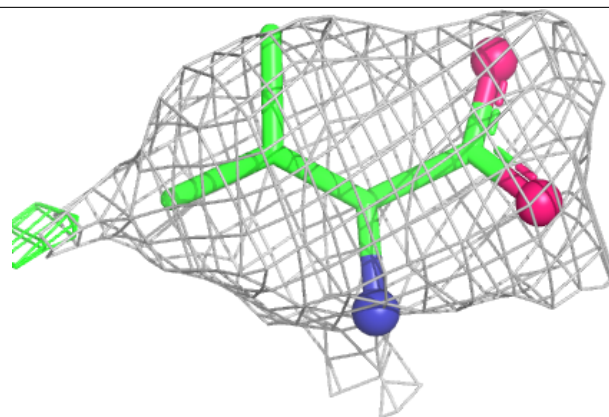
The following is a graphical depiction of the model fit to experimental electron density of all

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.

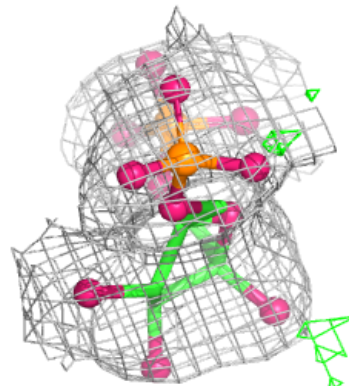
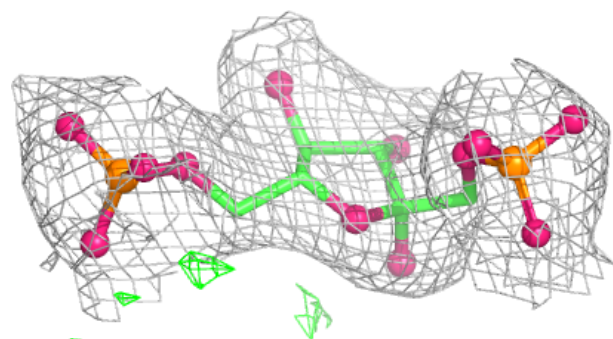
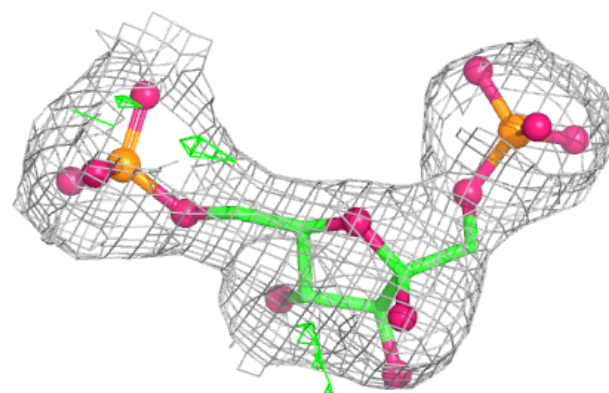


Electron density around VAL C 611:

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

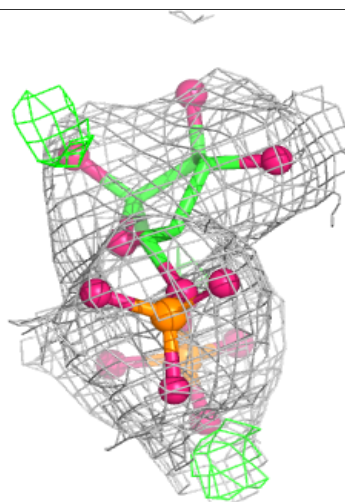
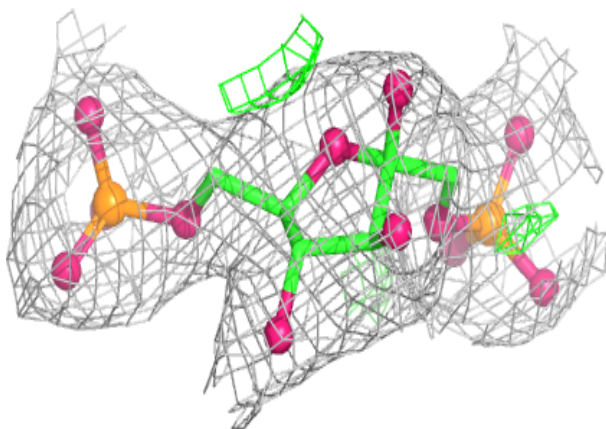
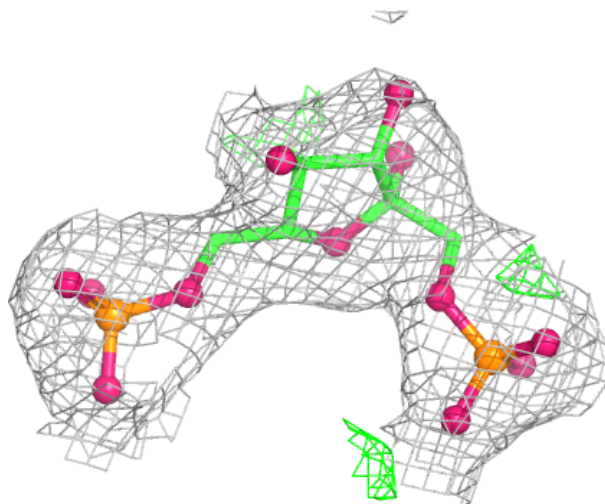
**Electron density around FBP A 602:**

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



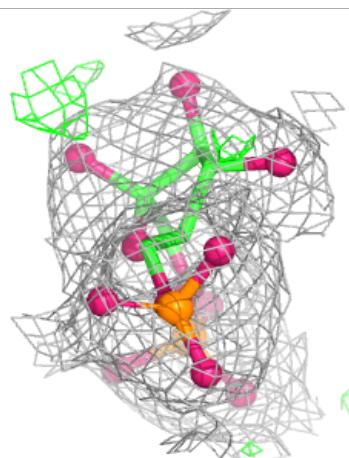
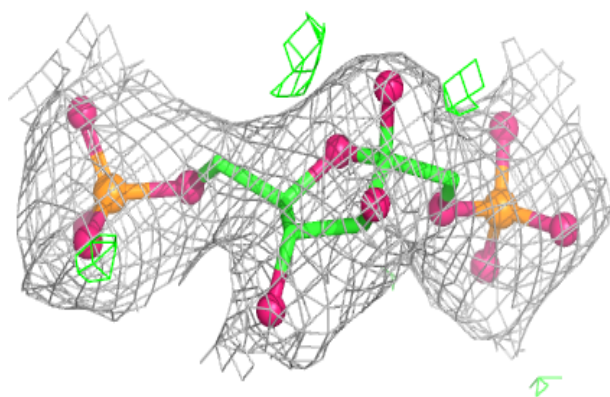
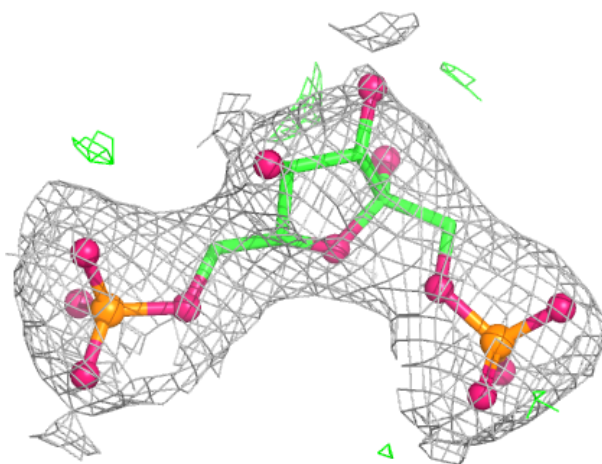
Electron density around FBP D 601:

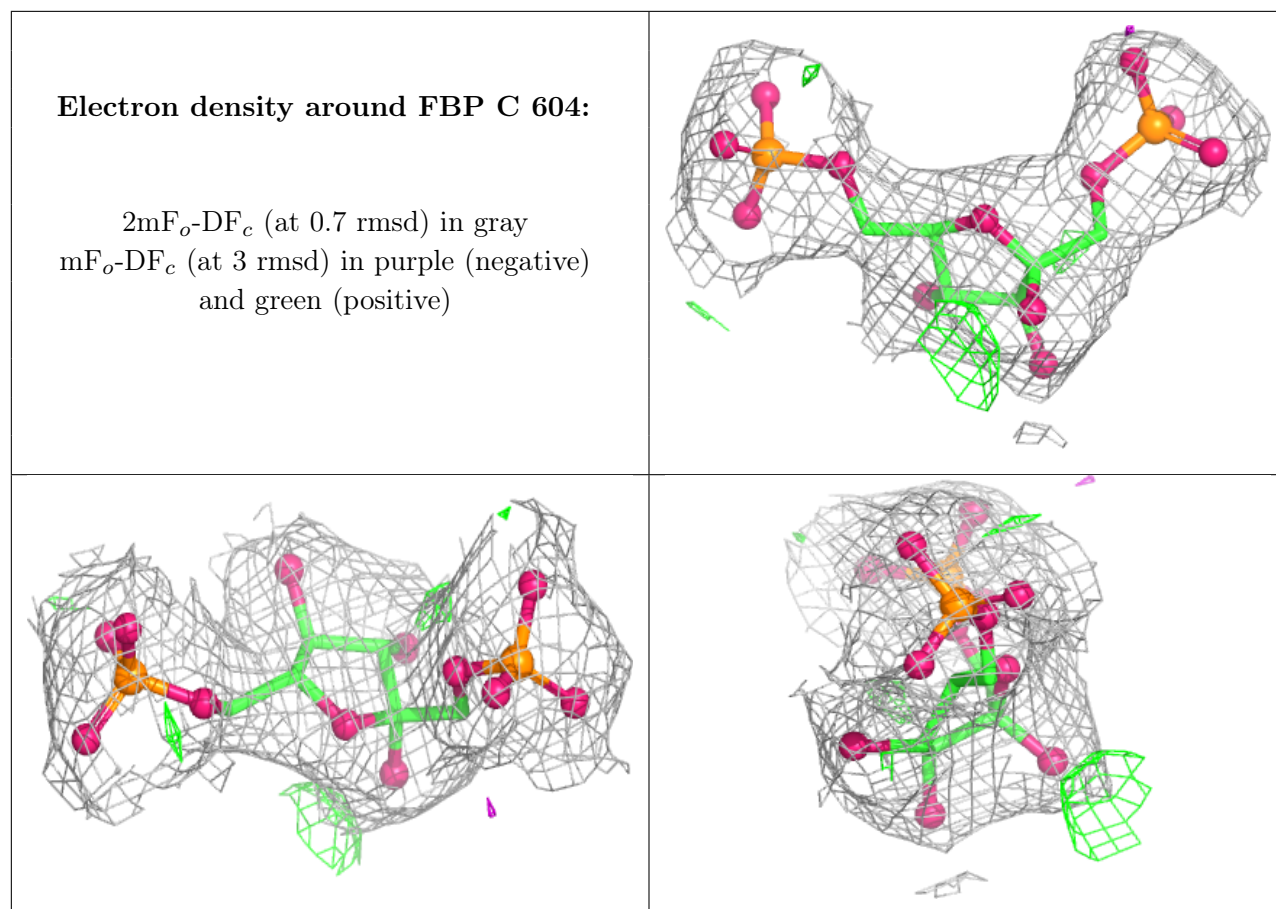
$2mF_o-DF_c$ (at 0.7 rmsd) in gray
 mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



Electron density around FBP B 602:

$2mF_o-DF_c$ (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.