Full wwPDB X-ray Structure Validation Report (i)

Jan 5, 2023 – 04:10 PM JST

PDB ID	:	8HMR
Title	:	Crystal Structure of PKM2 mutant L144P
Authors	:	Upadhyay, S.; Kumar, A.; Patel, A.K.
Deposited on	:	2022-12-05
Resolution	:	2.60 Å(reported)

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

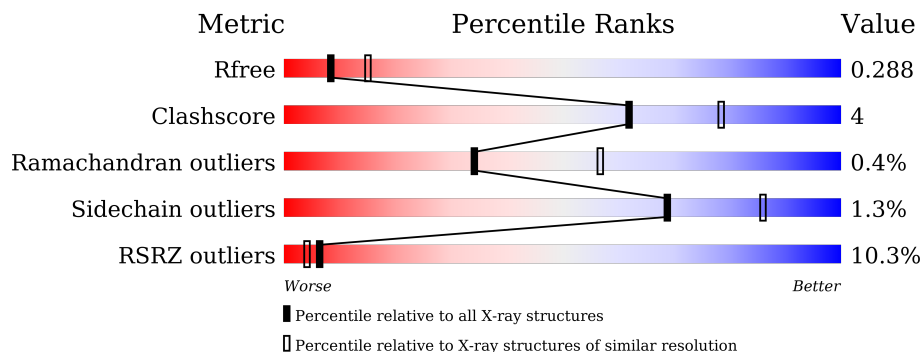|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.31.3
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.3

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 2.60 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	Percentile Ranks	Value
Rfree		0.288
Clashscore		4
Ramachandran outliers		0.4%
Sidechain outliers		1.3%
RSRZ outliers		10.3%

Worse ... *Better*

▮ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R$_{free}$	130704	3163 (2.60-2.60)
Clashscore	141614	3518 (2.60-2.60)
Ramachandran outliers	138981	3455 (2.60-2.60)
Sidechain outliers	138945	3455 (2.60-2.60)
RSRZ outliers	127900	3104 (2.60-2.60)

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

Mol	Chain	Length	Quality of chain
1	A	551	9% / 83% 9% 7%
1	B	551	9% / 83% 9% · 7%
1	C	551	9% / 84% 9% 7%
1	D	551	12% / 79% 11% 10%

WORLDWIDE
wwPDB
PROTEIN DATA BANK

2 Entry composition ⓘ

There are 6 unique types of molecules in this entry. The entry contains 15546 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
1	A	513	Total	C	N	O	S	0	0	0
			3911	2459	693	734	25			
1	B	512	Total	C	N	O	S	0	0	0
			3871	2435	684	727	25			
1	C	512	Total	C	N	O	S	0	0	0
			3888	2444	686	733	25			
1	D	497	Total	C	N	O	S	0	0	0
			3741	2350	662	705	24			

There are 84 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-19	MET	-	initiating methionine	UNP P14618
A	-18	GLY	-	expression tag	UNP P14618
A	-17	SER	-	expression tag	UNP P14618
A	-16	SER	-	expression tag	UNP P14618
A	-15	HIS	-	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	SER	-	expression tag	UNP P14618
A	-8	SER	-	expression tag	UNP P14618
A	-7	GLY	-	expression tag	UNP P14618
A	-6	LEU	-	expression tag	UNP P14618
A	-5	VAL	-	expression tag	UNP P14618
A	-4	PRO	-	expression tag	UNP P14618
A	-3	ARG	-	expression tag	UNP P14618
A	-2	GLY	-	expression tag	UNP P14618
A	-1	SER	-	expression tag	UNP P14618
A	0	HIS	-	expression tag	UNP P14618
A	144	PRO	LEU	engineered mutation	UNP P14618

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Chain	Residue	Modelled	Actual	Comment	Reference
B	-19	MET	-	initiating methionine	UNP P14618
B	-18	GLY	-	expression tag	UNP P14618
B	-17	SER	-	expression tag	UNP P14618
B	-16	SER	-	expression tag	UNP P14618
B	-15	HIS	-	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	SER	-	expression tag	UNP P14618
B	-8	SER	-	expression tag	UNP P14618
B	-7	GLY	-	expression tag	UNP P14618
B	-6	LEU	-	expression tag	UNP P14618
B	-5	VAL	-	expression tag	UNP P14618
B	-4	PRO	-	expression tag	UNP P14618
B	-3	ARG	-	expression tag	UNP P14618
B	-2	GLY	-	expression tag	UNP P14618
B	-1	SER	-	expression tag	UNP P14618
B	0	HIS	-	expression tag	UNP P14618
B	144	PRO	LEU	engineered mutation	UNP P14618
C	-19	MET	-	initiating methionine	UNP P14618
C	-18	GLY	-	expression tag	UNP P14618
C	-17	SER	-	expression tag	UNP P14618
C	-16	SER	-	expression tag	UNP P14618
C	-15	HIS	-	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	SER	-	expression tag	UNP P14618
C	-8	SER	-	expression tag	UNP P14618
C	-7	GLY	-	expression tag	UNP P14618
C	-6	LEU	-	expression tag	UNP P14618
C	-5	VAL	-	expression tag	UNP P14618
C	-4	PRO	-	expression tag	UNP P14618
C	-3	ARG	-	expression tag	UNP P14618
C	-2	GLY	-	expression tag	UNP P14618
C	-1	SER	-	expression tag	UNP P14618
C	0	HIS	-	expression tag	UNP P14618
C	144	PRO	LEU	engineered mutation	UNP P14618

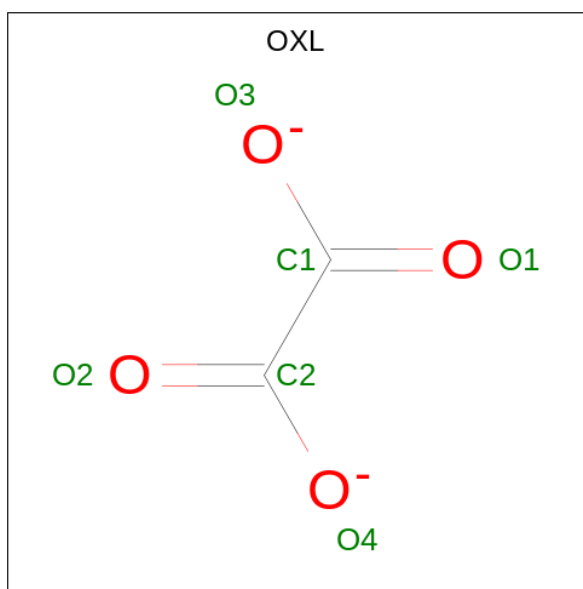*Continued on next page...*

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Chain	Residue	Modelled	Actual	Comment	Reference
D	-19	MET	-	initiating methionine	UNP P14618
D	-18	GLY	-	expression tag	UNP P14618
D	-17	SER	-	expression tag	UNP P14618
D	-16	SER	-	expression tag	UNP P14618
D	-15	HIS	-	expression tag	UNP P14618
D	-14	HIS	-	expression tag	UNP P14618
D	-13	HIS	-	expression tag	UNP P14618
D	-12	HIS	-	expression tag	UNP P14618
D	-11	HIS	-	expression tag	UNP P14618
D	-10	HIS	-	expression tag	UNP P14618
D	-9	SER	-	expression tag	UNP P14618
D	-8	SER	-	expression tag	UNP P14618
D	-7	GLY	-	expression tag	UNP P14618
D	-6	LEU	-	expression tag	UNP P14618
D	-5	VAL	-	expression tag	UNP P14618
D	-4	PRO	-	expression tag	UNP P14618
D	-3	ARG	-	expression tag	UNP P14618
D	-2	GLY	-	expression tag	UNP P14618
D	-1	SER	-	expression tag	UNP P14618
D	0	HIS	-	expression tag	UNP P14618
D	144	PRO	LEU	engineered mutation	UNP P14618

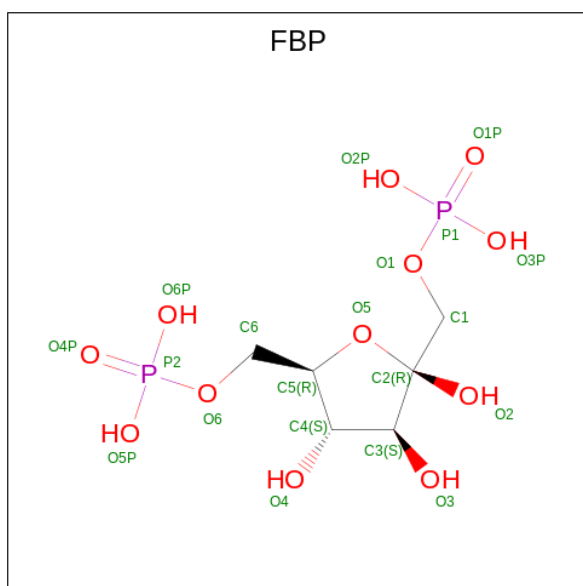- Molecule 2 is OXALATE ION (three-letter code: OXL) (formula: C_2O_4).

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

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

- Molecule 3 is 1,6-di-O-phosphono-beta-D-fructofuranose (three-letter code: FBP) (formula: $C_6H_{14}O_{12}P_2$) (labeled as "Ligand of Interest" by depositor).

FBP

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

- Molecule 4 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

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

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

- Molecule 5 is 1,2-ETHANEDIOL (three-letter code: EDO) (formula: $C_2H_6O_2$).

EDO
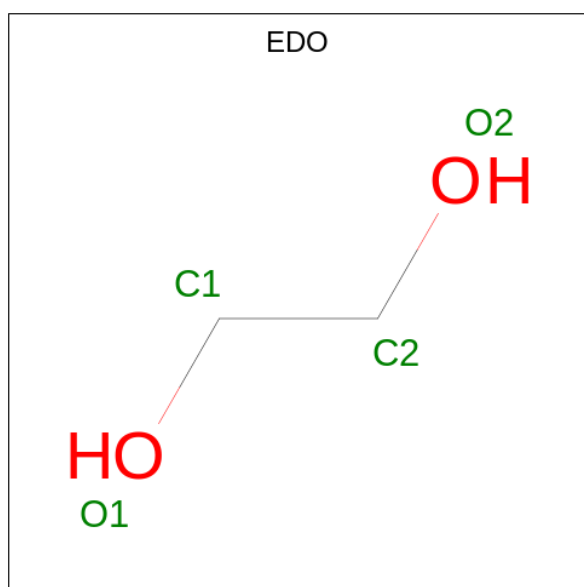
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	C	1	Total 4	C 2	O 2	0	0
5	C	1	Total 4	C 2	O 2	0	0

- Molecule 6 is water.

| Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	11	Total 11	O 11	0	0
6	B	1	Total 1	O 1	0	0
6	C	4	Total 4	O 4	0	0
6	D	3	Total 3	O 3	0	0

3 Residue-property plots ⓘ

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.
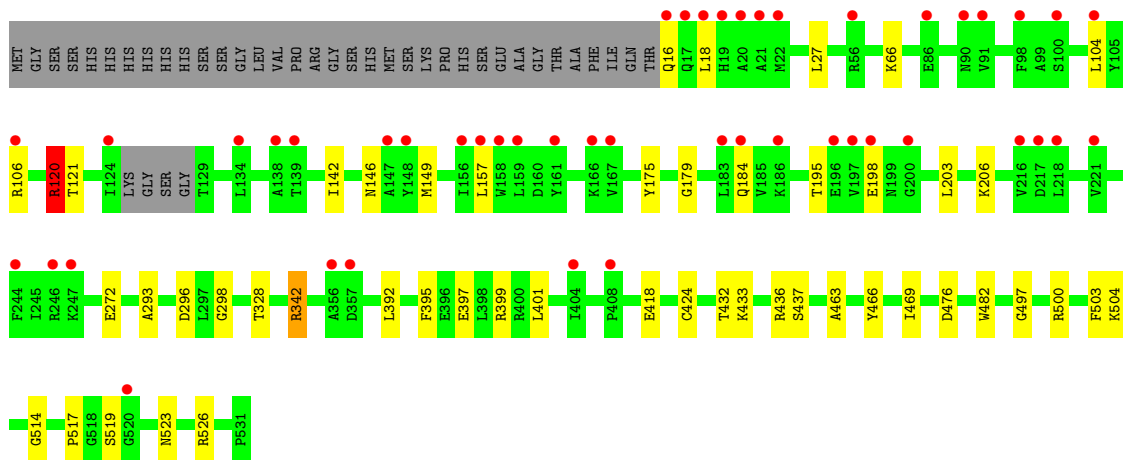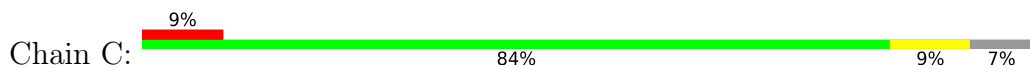
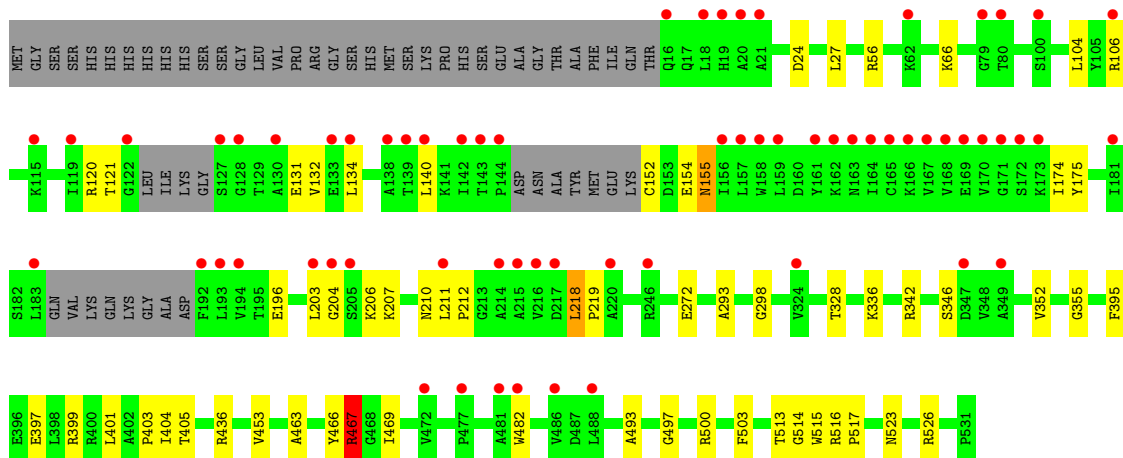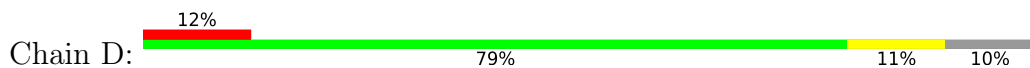• Molecule 1: Pyruvate kinase PKM
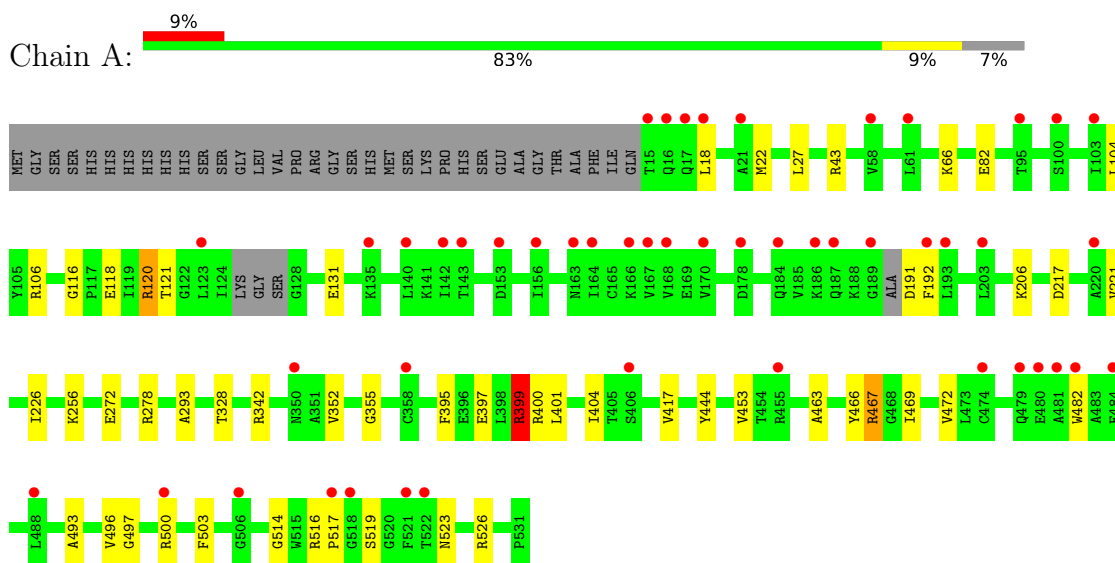
Chain A:

• Molecule 1: Pyruvate kinase PKM

Chain B:

• Molecule 1: Pyruvate kinase PKM

Chain C:

• Molecule 1: Pyruvate kinase PKM

Chain D:
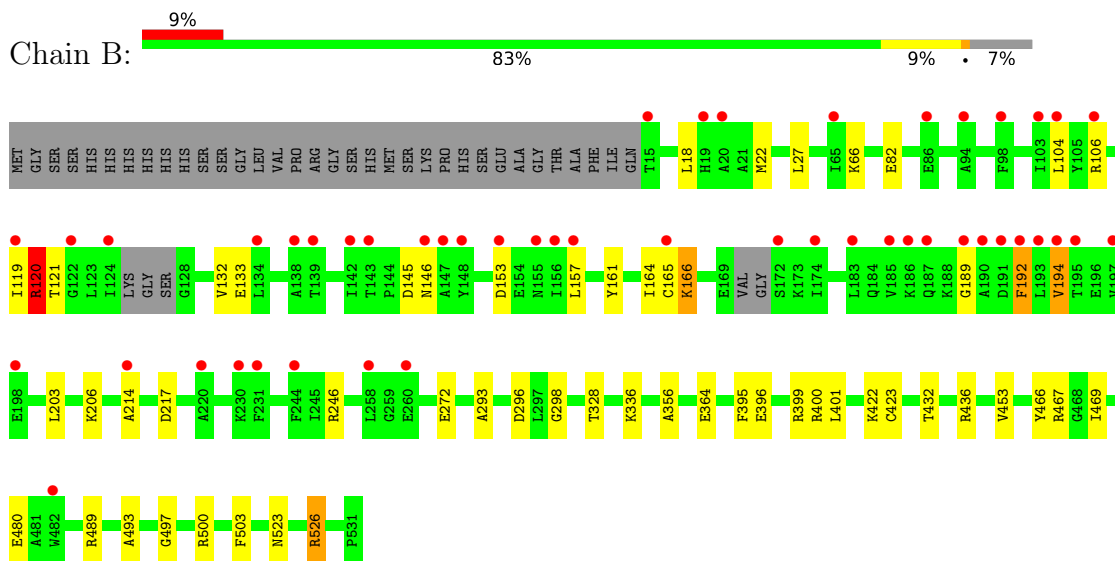
4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	80.40Å　151.77Å　89.85Å 90.00°　100.59°　90.00°	Depositor
Resolution (Å)	42.01 – 2.60 41.97 – 2.60	Depositor EDS
% Data completeness (in resolution range)	97.6 (42.01-2.60) 97.6 (41.97-2.60)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.82 (at 2.61Å)	Xtriage
Refinement program	PHENIX 1.20.1_4487	Depositor
R, R_{free}	0.263 , 0.295 0.262 , 0.288	Depositor DCC
R_{free} test set	3197 reflections (5.04%)	wwPDB-VP
Wilson B-factor (Å^2)	56.3	Xtriage
Anisotropy	0.325	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.34 , 36.7	EDS
L-test for twinning[2]	$< |L| > = 0.47, < L^2 > = 0.30$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.93	EDS
Total number of atoms	15546	wwPDB-VP
Average B, all atoms (Å^2)	68.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.69% of the height of the origin peak. No significant pseudotranslation is detected.*

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[1]Intensities estimated from amplitudes.
[2]Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: FBP, MG, EDO, 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	0.43	0/3974	0.76	2/5371 (0.0%)
1	B	0.44	1/3932 (0.0%)	0.74	0/5319
1	C	0.42	0/3952	0.71	0/5349
1	D	0.43	0/3800	0.74	1/5146 (0.0%)
All	All	0.43	1/15658 (0.0%)	0.74	3/21185 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	4
1	B	0	4
1	C	0	3
1	D	0	2
All	All	0	13

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	364	GLU	CD-OE1	-5.48	1.19	1.25

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	399	ARG	CG-CD-NE	6.59	125.64	111.80
1	A	43	ARG	NE-CZ-NH1	6.29	123.44	120.30
1	D	467	ARG	CG-CD-NE	-5.98	99.25	111.80

There are no chirality outliers.

All (13) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	120	ARG	Sidechain
1	A	278	ARG	Sidechain
1	A	467	ARG	Sidechain
1	A	516	ARG	Sidechain
1	B	120	ARG	Sidechain
1	B	246	ARG	Sidechain
1	B	436	ARG	Sidechain
1	B	526	ARG	Sidechain
1	C	120	ARG	Sidechain
1	C	342	ARG	Sidechain
1	C	436	ARG	Sidechain
1	D	436	ARG	Sidechain
1	D	467	ARG	Sidechain

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	3911	0	3966	34	0
1	B	3871	0	3895	38	0
1	C	3888	0	3915	38	0
1	D	3741	0	3739	48	0
2	A	6	0	0	0	0
2	B	6	0	0	1	0
2	C	6	0	0	1	0
2	D	6	0	0	0	0
3	A	20	0	10	4	0
3	B	20	0	10	3	0
3	C	20	0	10	4	0
3	D	20	0	10	2	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
5	C	8	0	12	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	A	11	0	0	0	0
6	B	1	0	0	0	0
6	C	4	0	0	0	0
6	D	3	0	0	0	0
All	All	15546	0	15567	137	0

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

All (137) 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:B:120:ARG:HG2	1:B:120:ARG:HH21	0.90	1.06
1:B:120:ARG:HG2	1:B:120:ARG:NH2	1.64	1.00
1:D:131:GLU:HG2	1:D:204:GLY:HA2	1.51	0.93
1:C:342:ARG:HE	1:D:298:GLY:HA3	1.39	0.85
1:A:400:ARG:NH2	1:C:392:LEU:HD21	1.94	0.83
1:B:399:ARG:HH22	1:D:399:ARG:HH22	1.27	0.82
1:D:355:GLY:HA2	1:D:467:ARG:NH2	2.00	0.77
1:D:355:GLY:HA2	1:D:467:ARG:HH22	1.52	0.74
1:B:399:ARG:HH22	1:D:399:ARG:NH2	1.88	0.72
1:B:120:ARG:HH21	1:B:120:ARG:CG	1.85	0.70
1:A:514:GLY:HA3	3:A:602:FBP:O4	1.92	0.69
1:B:396:GLU:OE2	1:B:400:ARG:HD2	1.92	0.69
1:B:189:GLY:O	1:B:192:PHE:O	2.12	0.68
1:A:352:VAL:HG13	1:A:467:ARG:HH12	1.58	0.68
1:D:131:GLU:HG2	1:D:204:GLY:CA	2.23	0.66
1:C:120:ARG:HH21	1:C:120:ARG:HG2	1.61	0.66
1:D:514:GLY:HA3	3:D:601:FBP:O3	1.98	0.64
1:C:27:LEU:HD23	1:D:401:LEU:HD12	1.78	0.64
1:D:513:THR:HG21	1:D:526:ARG:HH12	1.64	0.63
1:C:120:ARG:HG2	1:C:120:ARG:NH2	2.14	0.62
1:B:422:LYS:NZ	1:D:403:PRO:O	2.32	0.61
1:C:401:LEU:HD12	1:D:27:LEU:HD23	1.83	0.61
1:B:120:ARG:NH2	1:B:120:ARG:CG	2.53	0.59
1:D:154:GLU:O	1:D:155:ASN:CB	2.51	0.59
1:B:523:ASN:O	1:D:526:ARG:HA	2.03	0.58
1:D:140:LEU:HD12	1:D:155:ASN:H	1.68	0.58
1:A:526:ARG:HA	1:C:523:ASN:O	2.03	0.58
1:C:514:GLY:HA3	3:C:604:FBP:H3	1.86	0.58
1:C:463:ALA:HB1	1:C:469:ILE:HG21	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:174:ILE:HD13	1:D:211:LEU:HD22	1.86	0.57
1:A:399:ARG:NE	1:C:418:GLU:OE1	2.36	0.57
1:A:519:SER:OG	3:A:602:FBP:O3P	2.24	0.56
1:B:356:ALA:O	1:B:467:ARG:NH1	2.36	0.56
1:D:517:PRO:HA	3:D:601:FBP:O1P	2.06	0.55
1:A:355:GLY:HA2	1:A:467:ARG:NH2	2.21	0.55
1:B:497:GLY:HA3	1:B:503:PHE:CZ	2.42	0.55
1:A:18:LEU:O	1:A:22:MET:HG2	2.08	0.54
1:C:432:THR:HA	3:C:604:FBP:H61	1.90	0.54
1:D:174:ILE:HD13	1:D:211:LEU:CD2	2.38	0.54
1:D:482:TRP:CD2	1:D:517:PRO:HG3	2.43	0.54
1:B:145:ASP:O	1:B:146:ASN:HB2	2.07	0.53
1:C:298:GLY:HA3	1:D:342:ARG:HE	1.73	0.53
1:C:497:GLY:HA3	1:C:503:PHE:CZ	2.43	0.53
1:A:118:GLU:OE1	1:A:120:ARG:HD3	2.09	0.53
1:C:120:ARG:HH21	1:C:120:ARG:CG	2.20	0.53
1:D:140:LEU:CD1	1:D:155:ASN:H	2.21	0.53
1:D:497:GLY:HA3	1:D:503:PHE:CZ	2.44	0.53
1:A:497:GLY:HA3	1:A:503:PHE:CZ	2.44	0.53
1:B:296:ASP:N	2:B:602:OXL:O2	2.26	0.53
1:A:466:TYR:HB2	1:A:469:ILE:HD12	1.90	0.52
1:D:355:GLY:CA	1:D:467:ARG:NH2	2.72	0.52
1:C:397:GLU:O	1:C:401:LEU:HG	2.10	0.52
1:D:466:TYR:HB2	1:D:469:ILE:HD12	1.92	0.51
1:D:397:GLU:O	1:D:401:LEU:HG	2.10	0.51
1:B:192:PHE:HE1	1:B:194:VAL:HG23	1.74	0.51
1:C:466:TYR:HB2	1:C:469:ILE:HD12	1.93	0.51
1:A:342:ARG:HE	1:B:298:GLY:HA3	1.76	0.51
1:A:397:GLU:O	1:A:401:LEU:HG	2.11	0.50
1:B:526:ARG:HA	1:D:523:ASN:O	2.10	0.50
1:A:395:PHE:O	1:A:399:ARG:HB2	2.11	0.50
1:D:134:LEU:HD11	1:D:203:LEU:HD23	1.95	0.49
1:D:513:THR:HG21	1:D:526:ARG:NH1	2.28	0.49
1:B:423:CYS:HA	1:D:405:THR:O	2.12	0.49
1:C:66:LYS:HA	1:C:106:ARG:HH22	1.77	0.49
1:B:422:LYS:O	1:D:404:ILE:HG23	2.13	0.48
1:A:417:VAL:HG21	1:A:444:TYR:HB2	1.95	0.48
1:B:132:VAL:HG11	1:B:153:ASP:HA	1.96	0.48
1:A:472:VAL:HG11	1:A:496:VAL:HG11	1.95	0.48
1:C:298:GLY:HA3	1:D:342:ARG:NE	2.29	0.48
1:A:66:LYS:HA	1:A:106:ARG:HH22	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:400:ARG:HH22	1:C:392:LEU:HD21	1.78	0.48
1:A:27:LEU:HD23	1:B:401:LEU:HD12	1.94	0.48
1:A:191:ASP:OD1	1:A:192:PHE:HD2	1.96	0.48
1:B:66:LYS:HA	1:B:106:ARG:HH22	1.78	0.47
1:B:272:GLU:HB2	1:B:296:ASP:HB2	1.95	0.47
1:A:401:LEU:HD12	1:B:27:LEU:HD23	1.95	0.47
1:D:66:LYS:HA	1:D:106:ARG:HH22	1.79	0.47
1:D:175:TYR:HB2	1:D:210:ASN:HB2	1.95	0.47
1:A:482:TRP:CD1	1:A:517:PRO:HG3	2.50	0.46
1:B:466:TYR:HB2	1:B:469:ILE:HD12	1.97	0.46
1:B:432:THR:HA	3:B:601:FBP:H61	1.98	0.46
1:B:489:ARG:HH12	3:B:601:FBP:H11	1.79	0.46
1:B:119:ILE:HG12	1:B:161:TYR:HB2	1.97	0.46
1:D:355:GLY:C	1:D:467:ARG:HH21	2.19	0.46
1:B:489:ARG:NH1	3:B:601:FBP:O3P	2.48	0.46
1:D:132:VAL:HG22	1:D:203:LEU:HB3	1.97	0.46
1:A:104:LEU:HD22	1:A:500:ARG:NH1	2.31	0.46
1:A:116:GLY:O	1:A:118:GLU:N	2.48	0.45
1:A:221:VAL:HG12	1:A:226:ILE:HG13	1.98	0.45
1:A:191:ASP:OD1	1:A:192:PHE:CD2	2.70	0.45
1:A:404:ILE:HD13	1:C:424:CYS:SG	2.56	0.45
1:C:16:GLN:HG3	1:C:18:LEU:HG	1.98	0.45
1:C:120:ARG:NH2	1:C:120:ARG:CG	2.80	0.45
1:D:352:VAL:HG13	1:D:467:ARG:NH1	2.31	0.45
1:C:433:LYS:HD3	1:C:519:SER:HB2	1.99	0.45
1:B:157:LEU:HD13	1:B:203:LEU:HD21	1.99	0.44
1:B:104:LEU:HD22	1:B:500:ARG:NH1	2.32	0.44
1:C:175:TYR:HB3	1:C:179:GLY:HA2	1.99	0.44
1:D:104:LEU:HD22	1:D:500:ARG:NH1	2.32	0.44
1:D:395:PHE:CZ	1:D:399:ARG:HD3	2.52	0.44
1:C:104:LEU:HD22	1:C:500:ARG:NH1	2.33	0.44
1:C:157:LEU:HD13	1:C:203:LEU:HD21	1.99	0.44
1:A:272:GLU:HB3	1:A:293:ALA:HB3	1.99	0.44
1:D:121:THR:O	1:D:206:LYS:HA	2.17	0.44
1:C:395:PHE:CZ	1:C:399:ARG:HD3	2.53	0.44
1:D:218:LEU:HD23	1:D:219:PRO:HD2	2.00	0.44
1:A:463:ALA:HB1	1:A:469:ILE:HG21	2.00	0.43
1:C:272:GLU:HB2	1:C:296:ASP:HB2	2.00	0.43
1:B:336:LYS:HD3	1:B:336:LYS:HA	1.85	0.43
1:B:453:VAL:CG2	1:B:493:ALA:HB2	2.48	0.43
1:C:293:ALA:HB1	2:C:601:OXL:C2	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:174:ILE:CD1	1:D:211:LEU:CD2	2.96	0.43
1:C:272:GLU:HB3	1:C:293:ALA:HB3	2.00	0.43
1:D:120:ARG:HA	1:D:207:LYS:O	2.19	0.43
1:C:514:GLY:CA	3:C:604:FBP:H3	2.48	0.42
1:C:437:SER:OG	3:C:604:FBP:O6P	2.25	0.42
1:A:519:SER:OG	3:A:602:FBP:P1	2.78	0.42
1:C:142:ILE:HD13	1:C:195:THR:HG21	2.01	0.42
1:C:146:ASN:HB3	1:C:149:MET:CE	2.49	0.42
1:D:453:VAL:CG2	1:D:493:ALA:HB2	2.49	0.42
1:B:18:LEU:O	1:B:22:MET:HG2	2.20	0.42
1:A:523:ASN:O	1:C:526:ARG:HA	2.20	0.42
1:C:121:THR:O	1:C:206:LYS:HA	2.20	0.41
1:B:395:PHE:CZ	1:B:399:ARG:HD3	2.55	0.41
1:B:121:THR:O	1:B:206:LYS:HA	2.21	0.41
1:B:165:CYS:O	1:B:166:LYS:CB	2.69	0.41
1:D:336:LYS:HD3	1:D:336:LYS:HA	1.84	0.41
1:C:184:GLN:HB2	1:C:198:GLU:OE2	2.21	0.41
1:A:121:THR:O	1:A:206:LYS:HA	2.21	0.41
1:D:463:ALA:HB1	1:D:469:ILE:HG21	2.03	0.40
1:B:272:GLU:HB3	1:B:293:ALA:HB3	2.02	0.40
1:C:482:TRP:CD1	1:C:517:PRO:HG3	2.56	0.40
1:A:514:GLY:CA	3:A:602:FBP:O4	2.67	0.40
1:D:482:TRP:CG	1:D:517:PRO:HG3	2.56	0.40
1:A:453:VAL:CG2	1:A:493:ALA:HB2	2.51	0.40
1:D:272:GLU:HB3	1:D:293:ALA:HB3	2.02	0.40
1:D:515:TRP:CE3	1:D:516:ARG:HB2	2.56	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	507/551 (92%)	496 (98%)	10 (2%)	1 (0%)	47	71
1	B	506/551 (92%)	489 (97%)	14 (3%)	3 (1%)	25	47
1	C	508/551 (92%)	499 (98%)	8 (2%)	1 (0%)	47	71
1	D	489/551 (89%)	476 (97%)	10 (2%)	3 (1%)	25	47
All	All	2010/2204 (91%)	1960 (98%)	42 (2%)	8 (0%)	34	57

All (8) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	166	LYS
1	B	214	ALA
1	D	155	ASN
1	A	328	THR
1	B	328	THR
1	C	328	THR
1	D	328	THR
1	D	212	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	418/453 (92%)	413 (99%)	5 (1%)	71	87
1	B	408/453 (90%)	400 (98%)	8 (2%)	55	78
1	C	413/453 (91%)	410 (99%)	3 (1%)	84	94
1	D	393/453 (87%)	387 (98%)	6 (2%)	65	83
All	All	1632/1812 (90%)	1610 (99%)	22 (1%)	69	86

All (22) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	82	GLU
1	A	131	GLU
1	A	217	ASP

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W O R L D W I D E
wwPDB
PROTEIN DATA BANK

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Mol	Chain	Res	Type
1	A	256	LYS
1	A	399	ARG
1	B	82	GLU
1	B	120	ARG
1	B	133	GLU
1	B	164	ILE
1	B	192	PHE
1	B	194	VAL
1	B	217	ASP
1	B	480	GLU
1	C	120	ARG
1	C	476	ASP
1	C	504	LYS
1	D	24	ASP
1	D	56	ARG
1	D	152	CYS
1	D	196	GLU
1	D	218	LEU
1	D	346	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
1	D	274	HIS

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

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

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 14 ligands modelled in this entry, 4 are monoatomic - leaving 10 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	$\#|Z| > 2$
3	FBP	D	601	-	18,20,20	0.53	0	23,32,32	0.72	0
3	FBP	B	601	-	18,20,20	0.56	0	23,32,32	0.71	0
2	OXL	A	601	4	5,5,5	1.32	0	6,6,6	1.50	0
5	EDO	C	602	-	3,3,3	0.46	0	2,2,2	0.49	0
2	OXL	D	602	4	5,5,5	1.19	0	6,6,6	1.58	0
3	FBP	C	604	-	18,20,20	0.61	0	23,32,32	0.63	0
2	OXL	B	602	4	5,5,5	1.75	2 (40%)	6,6,6	1.10	0
2	OXL	C	601	4	5,5,5	1.13	0	6,6,6	1.40	0
3	FBP	A	602	-	18,20,20	0.58	0	23,32,32	0.73	1 (4%)
5	EDO	C	603	-	3,3,3	0.30	0	2,2,2	0.93	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
3	FBP	D	601	-	-	8/13/32/32	0/1/1/1
3	FBP	B	601	-	-	2/13/32/32	0/1/1/1
2	OXL	A	601	4	-	1/4/4/4	-
5	EDO	C	602	-	-	0/1/1/1	-
2	OXL	D	602	4	-	4/4/4/4	-
3	FBP	C	604	-	-	11/13/32/32	0/1/1/1
2	OXL	B	602	4	-	3/4/4/4	-
2	OXL	C	601	4	-	0/4/4/4	-
3	FBP	A	602	-	-	8/13/32/32	0/1/1/1
5	EDO	C	603	-	-	1/1/1/1	-

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	602	OXL	O3-C1	-2.88	1.22	1.30
2	B	602	OXL	O4-C2	-2.54	1.23	1.30

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	602	FBP	O2-C2-O5	2.02	113.41	109.50

There are no chirality outliers.

All (38) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	D	602	OXL	O1-C1-C2-O2
2	D	602	OXL	O1-C1-C2-O4
2	D	602	OXL	O3-C1-C2-O4
3	A	602	FBP	O1-C1-C2-O2
3	A	602	FBP	O1-C1-C2-C3
3	A	602	FBP	O1-C1-C2-O5
3	A	602	FBP	C6-O6-P2-O4P
3	A	602	FBP	C6-O6-P2-O5P
3	A	602	FBP	C6-O6-P2-O6P
3	B	601	FBP	C4-C5-C6-O6
3	B	601	FBP	O5-C5-C6-O6
3	C	604	FBP	C1-O1-P1-O1P
3	C	604	FBP	C1-O1-P1-O2P
3	C	604	FBP	C1-O1-P1-O3P
3	C	604	FBP	O1-C1-C2-O2
3	C	604	FBP	O1-C1-C2-C3
3	C	604	FBP	O1-C1-C2-O5
3	C	604	FBP	C6-O6-P2-O4P
3	C	604	FBP	C6-O6-P2-O5P
3	C	604	FBP	C6-O6-P2-O6P
3	D	601	FBP	C1-O1-P1-O1P
3	D	601	FBP	C1-O1-P1-O2P
3	D	601	FBP	C1-O1-P1-O3P
3	D	601	FBP	O1-C1-C2-O2
3	D	601	FBP	O1-C1-C2-O5
3	D	601	FBP	C4-C5-C6-O6
3	C	604	FBP	C4-C5-C6-O6
3	C	604	FBP	O5-C5-C6-O6
3	A	602	FBP	C4-C5-C6-O6
3	A	602	FBP	O5-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
2	D	602	OXL	O3-C1-C2-O2
3	D	601	FBP	O5-C5-C6-O6
2	B	602	OXL	O1-C1-C2-O2
5	C	603	EDO	O1-C1-C2-O2
3	D	601	FBP	O1-C1-C2-C3
2	B	602	OXL	O3-C1-C2-O4
2	B	602	OXL	O3-C1-C2-O2
2	A	601	OXL	O3-C1-C2-O4

There are no ring outliers.
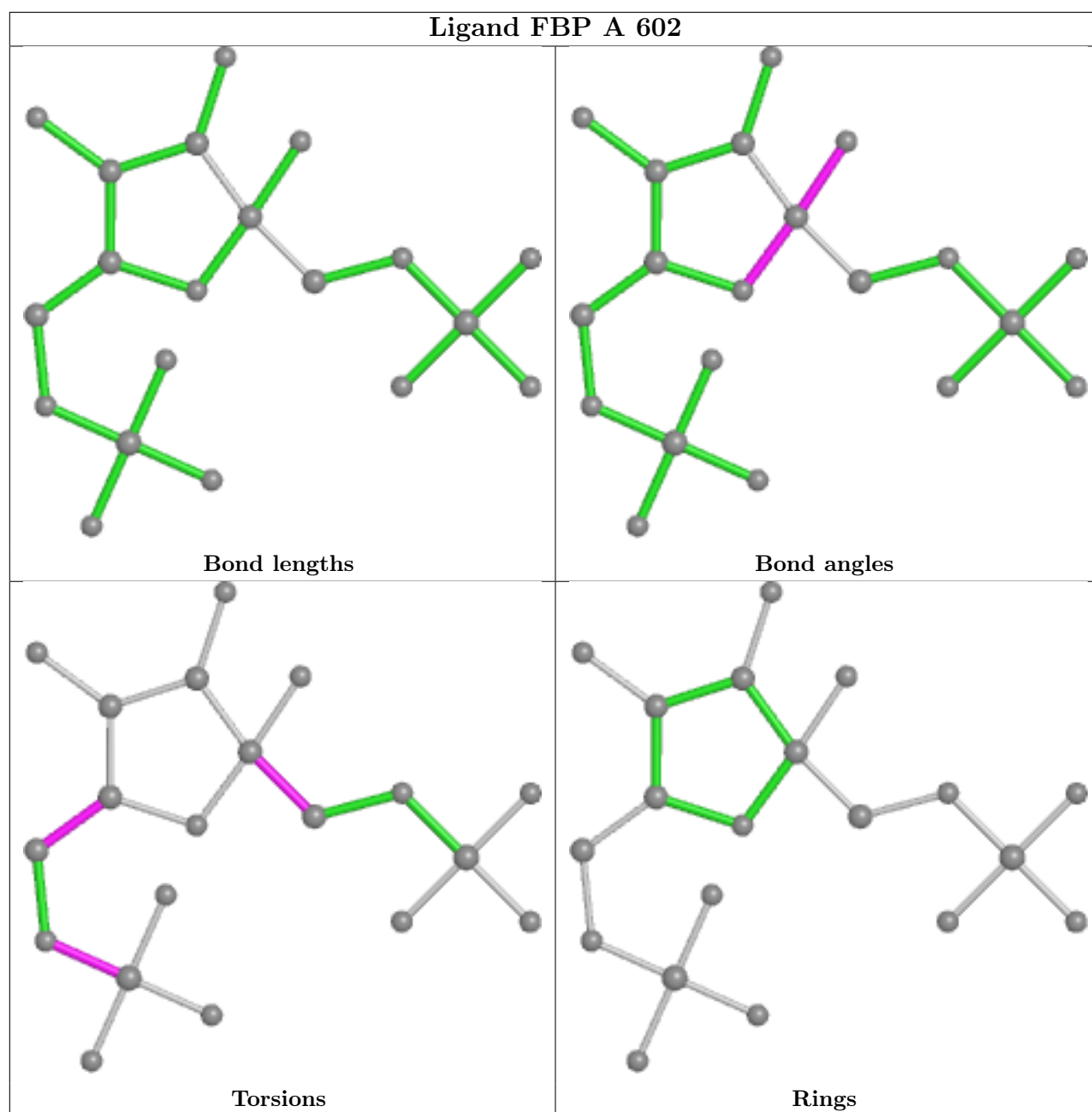
6 monomers are involved in 15 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	D	601	FBP	2	0
3	B	601	FBP	3	0
3	C	604	FBP	4	0
2	B	602	OXL	1	0
2	C	601	OXL	1	0
3	A	602	FBP	4	0

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

Ligand FBP D 601

Bond lengths

Bond angles

Torsions

Rings

Ligand FBP B 601

Bond lengths

Bond angles

Torsions

Rings

Ligand FBP C 604

Bond lengths

Bond angles

Torsions

Rings

Ligand FBP A 602

Bond lengths

Bond angles

Torsions

Rings
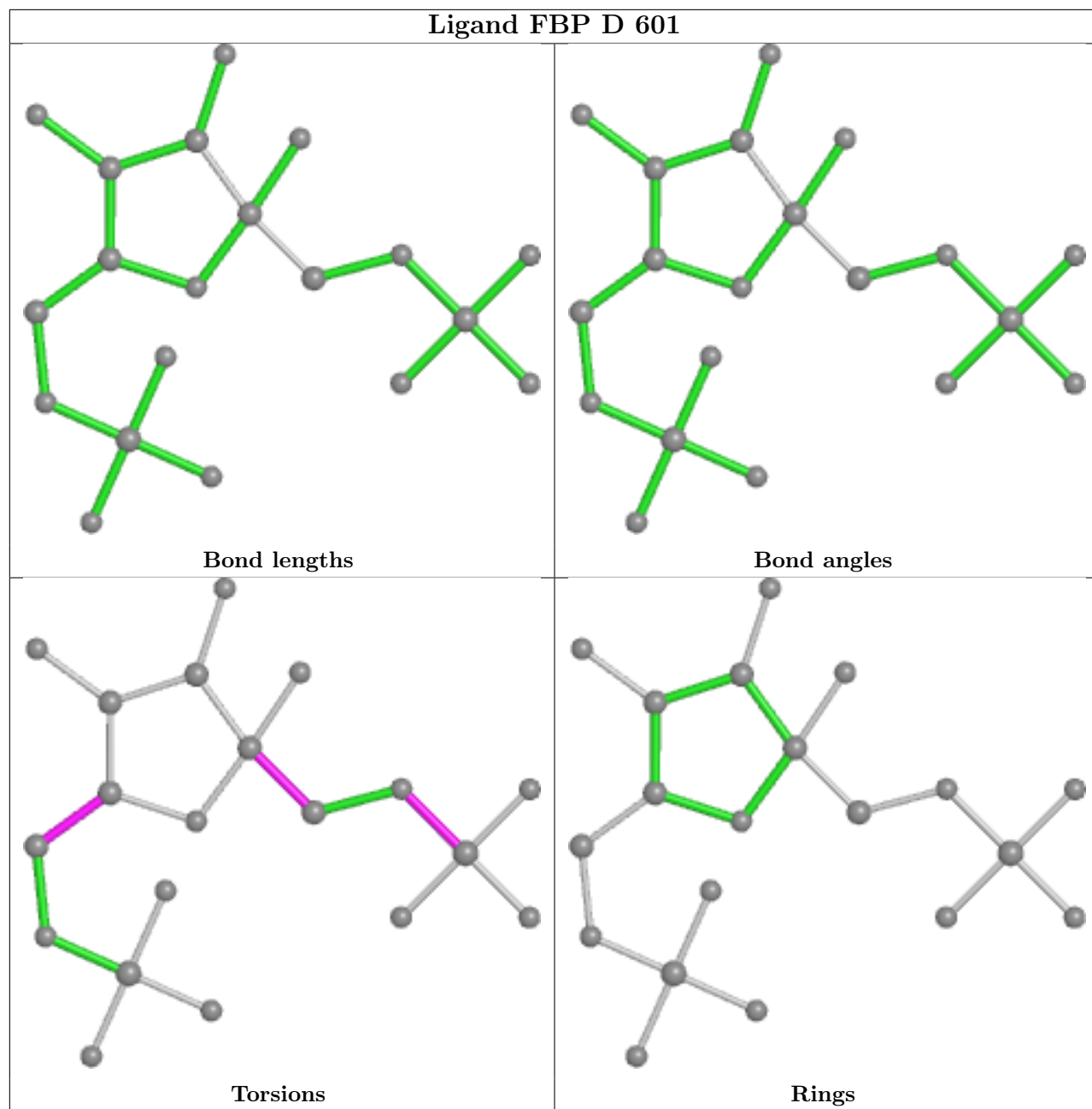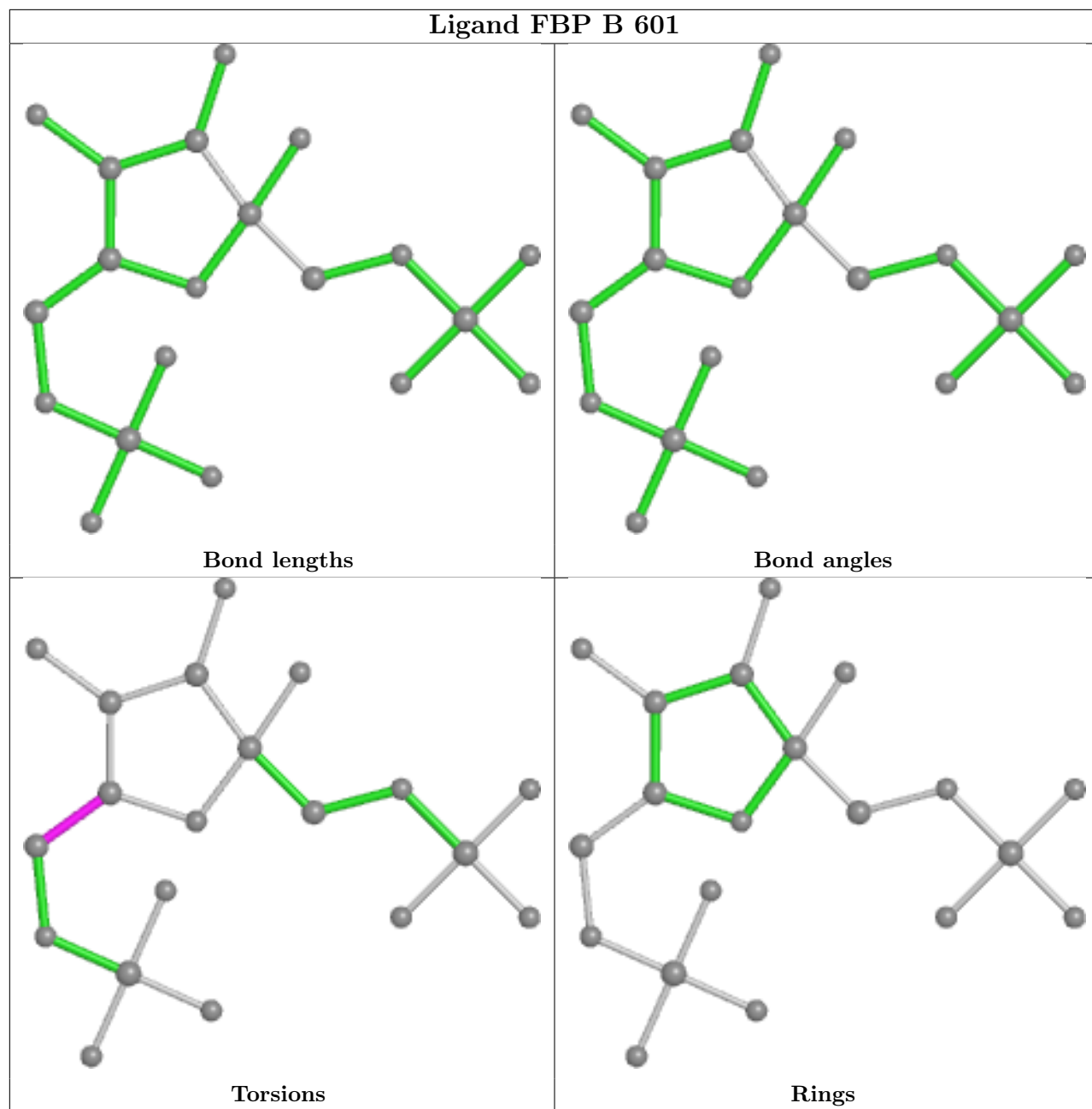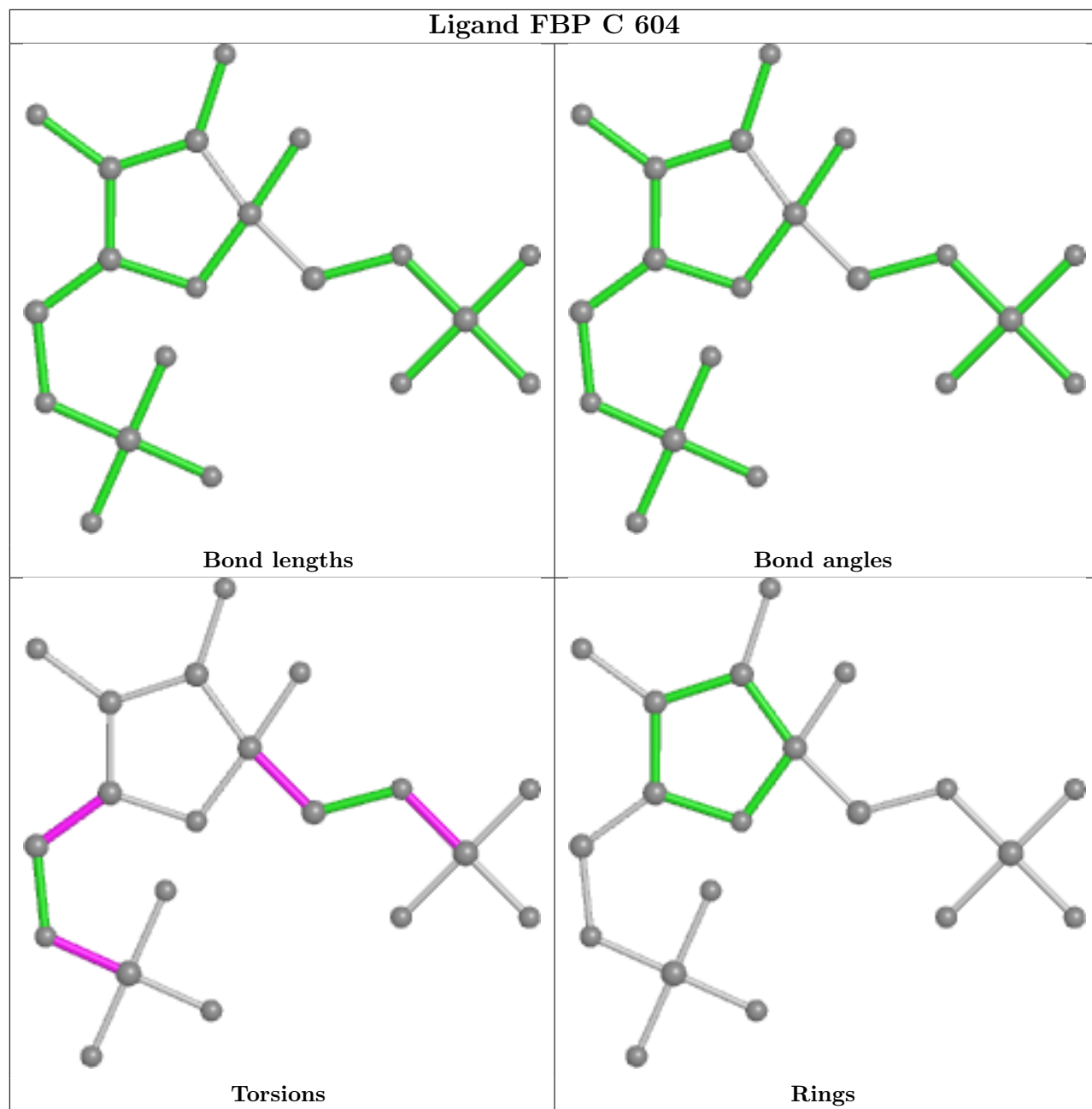
5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 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(Å²)	Q<0.9
1	A	513/551 (93%)	0.67	49 (9%)	8	5	32, 61, 104, 158	0
1	B	512/551 (92%)	0.65	49 (9%)	8	5	30, 60, 107, 135	0
1	C	512/551 (92%)	0.64	47 (9%)	9	6	38, 63, 103, 130	0
1	D	497/551 (90%)	0.91	65 (13%)	3	2	40, 69, 133, 152	0
All	All	2034/2204 (92%)	0.72	210 (10%)	6	4	30, 64, 112, 158	0

All (210) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	134	LEU	8.5
1	D	159	LEU	8.0
1	C	16	GLN	7.4
1	D	203	LEU	6.6
1	C	134	LEU	6.4
1	D	156	ILE	6.1
1	D	21	ALA	6.0
1	B	148	TYR	5.8
1	A	168	VAL	5.8
1	D	170	VAL	5.8
1	D	122	GLY	5.7
1	D	157	LEU	5.6
1	D	183	LEU	5.5
1	C	21	ALA	5.4
1	B	147	ALA	5.3
1	C	161	TYR	5.1
1	B	192	PHE	5.1
1	B	142	ILE	4.9
1	D	142	ILE	4.8
1	D	194	VAL	4.8
1	C	147	ALA	4.7

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Mol	Chain	Res	Type	RSRZ
1	D	127	SER	4.7
1	A	166	LYS	4.6
1	A	15	THR	4.6
1	B	143	THR	4.6
1	B	185	VAL	4.6
1	C	19	HIS	4.5
1	D	181	ILE	4.4
1	B	189	GLY	4.4
1	A	189	GLY	4.4
1	A	163	ASN	4.4
1	A	167	VAL	4.4
1	D	164	ILE	4.3
1	D	20	ALA	4.3
1	A	488	LEU	4.3
1	B	156	ILE	4.3
1	D	168	VAL	4.3
1	D	138	ALA	4.2
1	D	166	LYS	4.2
1	D	204	GLY	4.1
1	D	162	LYS	4.1
1	D	173	LYS	4.1
1	C	18	LEU	4.1
1	D	18	LEU	4.1
1	D	205	SER	4.0
1	B	193	LEU	4.0
1	D	19	HIS	3.9
1	A	17	GLN	3.9
1	B	190	ALA	3.9
1	B	194	VAL	3.9
1	D	143	THR	3.8
1	B	20	ALA	3.8
1	D	158	TRP	3.8
1	C	104	LEU	3.8
1	A	140	LEU	3.7
1	B	19	HIS	3.7
1	C	217	ASP	3.6
1	B	124	ILE	3.6
1	D	215	ALA	3.6
1	A	153	ASP	3.5
1	D	193	LEU	3.5
1	B	122	GLY	3.4
1	B	157	LEU	3.4

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Mol	Chain	Res	Type	RSRZ
1	A	482	TRP	3.4
1	C	20	ALA	3.4
1	D	140	LEU	3.4
1	A	143	THR	3.4
1	B	197	VAL	3.4
1	C	22	MET	3.3
1	A	16	GLN	3.3
1	D	16	GLN	3.3
1	D	128	GLY	3.3
1	B	94	ALA	3.2
1	C	56	ARG	3.2
1	A	484	GLU	3.2
1	C	186	LYS	3.2
1	C	221	VAL	3.2
1	C	198	GLU	3.2
1	C	247	LYS	3.2
1	B	165	CYS	3.2
1	B	183	LEU	3.2
1	A	100	SER	3.2
1	C	91	VAL	3.2
1	B	104	LEU	3.2
1	D	211	LEU	3.2
1	D	220	ALA	3.1
1	A	455	ARG	3.1
1	B	187	GLN	3.1
1	D	172	SER	3.1
1	A	474	CYS	3.1
1	C	157	LEU	3.1
1	B	15	THR	3.1
1	B	231	PHE	3.0
1	B	106	ARG	3.0
1	B	220	ALA	3.0
1	C	148	TYR	3.0
1	B	191	ASP	3.0
1	A	406	SER	3.0
1	B	153	ASP	3.0
1	B	258	LEU	2.9
1	D	171	GLY	2.9
1	C	138	ALA	2.9
1	B	230	LYS	2.9
1	A	506	GLY	2.9
1	D	246	ARG	2.9

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Mol	Chain	Res	Type	RSRZ
1	C	156	ILE	2.8
1	A	203	LEU	2.8
1	D	488	LEU	2.8
1	D	165	CYS	2.8
1	C	139	THR	2.8
1	C	100	SER	2.8
1	D	100	SER	2.8
1	C	17	GLN	2.7
1	A	164	ILE	2.7
1	D	477	PRO	2.7
1	D	216	VAL	2.7
1	D	161	TYR	2.7
1	A	142	ILE	2.7
1	B	482	TRP	2.7
1	A	58	VAL	2.7
1	A	480	GLU	2.7
1	B	98	PHE	2.7
1	B	139	THR	2.7
1	A	156	ILE	2.6
1	A	187	GLN	2.6
1	B	138	ALA	2.6
1	A	192	PHE	2.6
1	D	139	THR	2.6
1	D	481	ALA	2.6
1	B	155	ASN	2.6
1	C	167	VAL	2.6
1	C	200	GLY	2.6
1	B	174	ILE	2.6
1	A	479	GLN	2.6
1	C	197	VAL	2.6
1	A	103	ILE	2.6
1	C	246	ARG	2.6
1	A	522	THR	2.5
1	D	349	ALA	2.5
1	D	106	ARG	2.5
1	B	119	ILE	2.5
1	A	184	GLN	2.5
1	A	521	PHE	2.5
1	C	98	PHE	2.5
1	C	124	ILE	2.5
1	D	80	THR	2.5
1	A	18	LEU	2.5

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Mol	Chain	Res	Type	RSRZ
1	B	134	LEU	2.5
1	C	159	LEU	2.5
1	D	115	LYS	2.5
1	D	79	GLY	2.4
1	B	214	ALA	2.4
1	A	500	ARG	2.4
1	A	193	LEU	2.4
1	B	172	SER	2.4
1	D	167	VAL	2.4
1	D	217	ASP	2.4
1	D	214	ALA	2.4
1	C	183	LEU	2.4
1	C	520	GLY	2.4
1	D	472	VAL	2.4
1	A	481	ALA	2.4
1	B	260	GLU	2.4
1	C	184	GLN	2.3
1	A	350	ASN	2.3
1	C	106	ARG	2.3
1	D	62	LYS	2.3
1	A	21	ALA	2.3
1	C	158	TRP	2.3
1	C	408	PRO	2.3
1	B	65	ILE	2.3
1	B	103	ILE	2.3
1	D	324	VAL	2.3
1	A	135	LYS	2.3
1	A	178	ASP	2.3
1	B	195	THR	2.3
1	C	196	GLU	2.2
1	C	166	LYS	2.2
1	C	216	VAL	2.2
1	A	358	CYS	2.2
1	C	90	ASN	2.2
1	A	186	LYS	2.2
1	D	482	TRP	2.2
1	A	123	LEU	2.2
1	C	86	GLU	2.2
1	C	356	ALA	2.2
1	B	146	ASN	2.2
1	B	198	GLU	2.2
1	D	169	GLU	2.2

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Mol	Chain	Res	Type	RSRZ
1	D	130	ALA	2.2
1	A	95	THR	2.2
1	C	404	ILE	2.1
1	A	220	ALA	2.1
1	B	86	GLU	2.1
1	C	244	PHE	2.1
1	B	244	PHE	2.1
1	C	218	LEU	2.1
1	A	517	PRO	2.1
1	D	133	GLU	2.1
1	D	163	ASN	2.1
1	D	347	ASP	2.1
1	B	186	LYS	2.1
1	D	119	ILE	2.1
1	D	486	VAL	2.1
1	A	170	VAL	2.0
1	D	144	PRO	2.0
1	A	518	GLY	2.0
1	C	357	ASP	2.0
1	A	61	LEU	2.0
1	D	192	PHE	2.0

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

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

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 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.
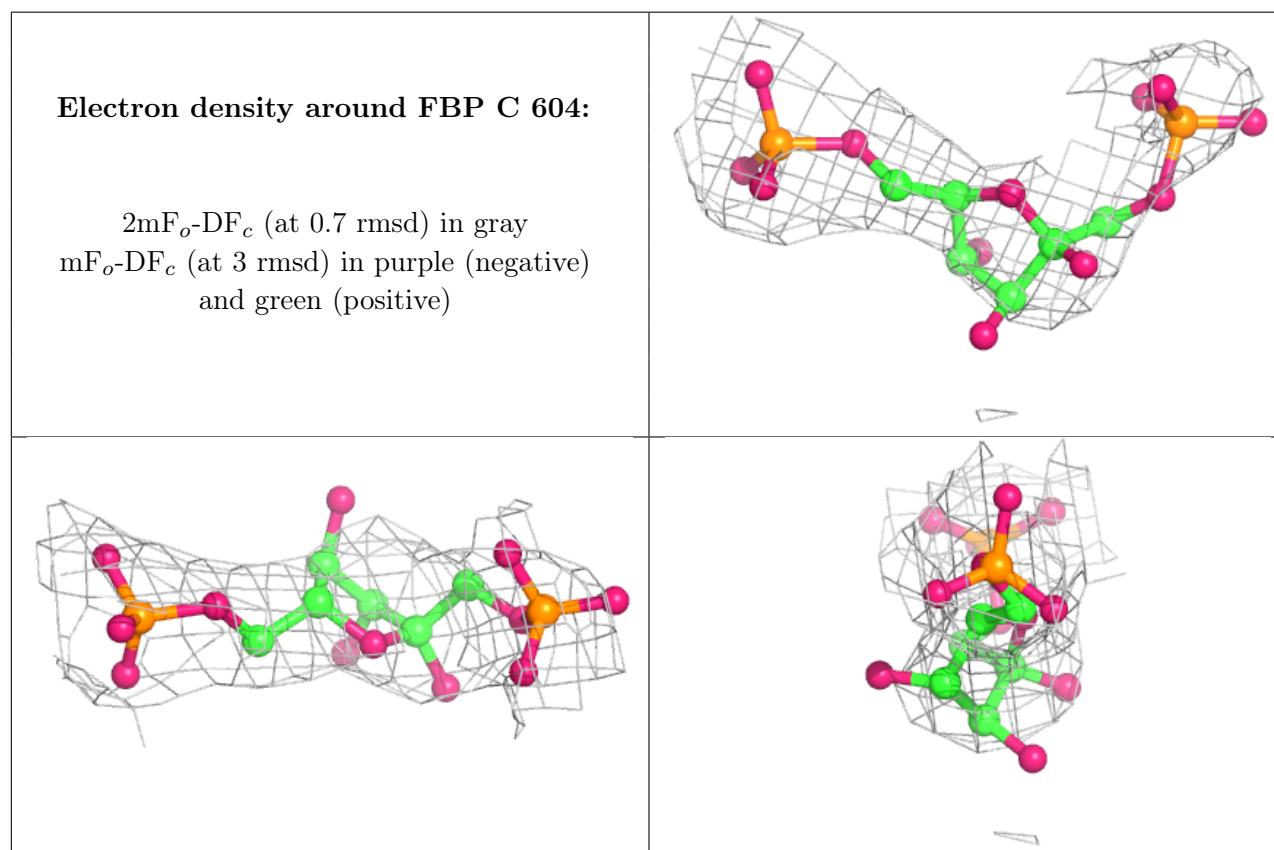
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
5	EDO	C	602	4/4	0.68	0.39	59,64,64,70	0
5	EDO	C	603	4/4	0.87	0.27	58,59,61,73	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	OXL	C	601	6/6	0.88	0.17	47,49,50,53	0
2	OXL	D	602	6/6	0.88	0.17	53,55,56,59	0
3	FBP	C	604	20/20	0.89	0.23	77,123,159,159	0
2	OXL	A	601	6/6	0.90	0.13	32,33,35,35	0
4	MG	B	603	1/1	0.90	0.25	74,74,74,74	0
3	FBP	A	602	20/20	0.93	0.20	60,81,100,101	0
3	FBP	D	601	20/20	0.94	0.16	50,65,84,86	0
4	MG	D	603	1/1	0.95	0.42	66,66,66,66	0
4	MG	A	603	1/1	0.96	0.34	75,75,75,75	0
3	FBP	B	601	20/20	0.96	0.14	49,59,68,71	0
4	MG	C	605	1/1	0.96	0.29	62,62,62,62	0
2	OXL	B	602	6/6	0.97	0.10	45,47,48,54	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.
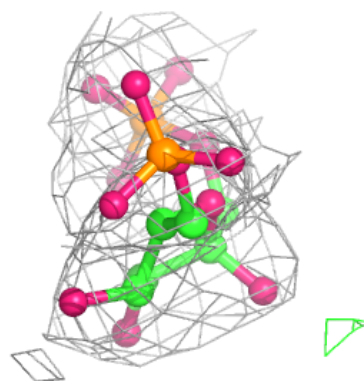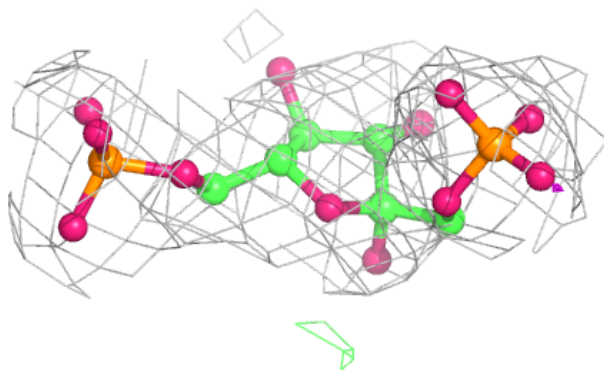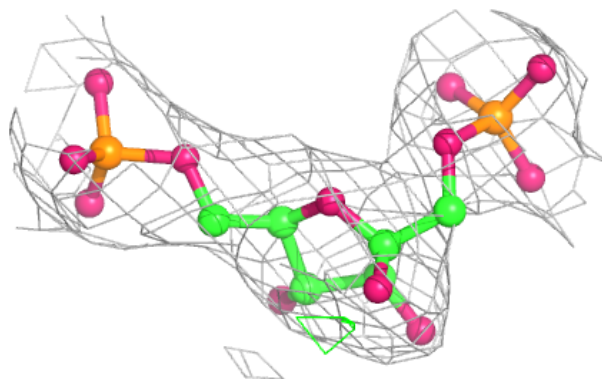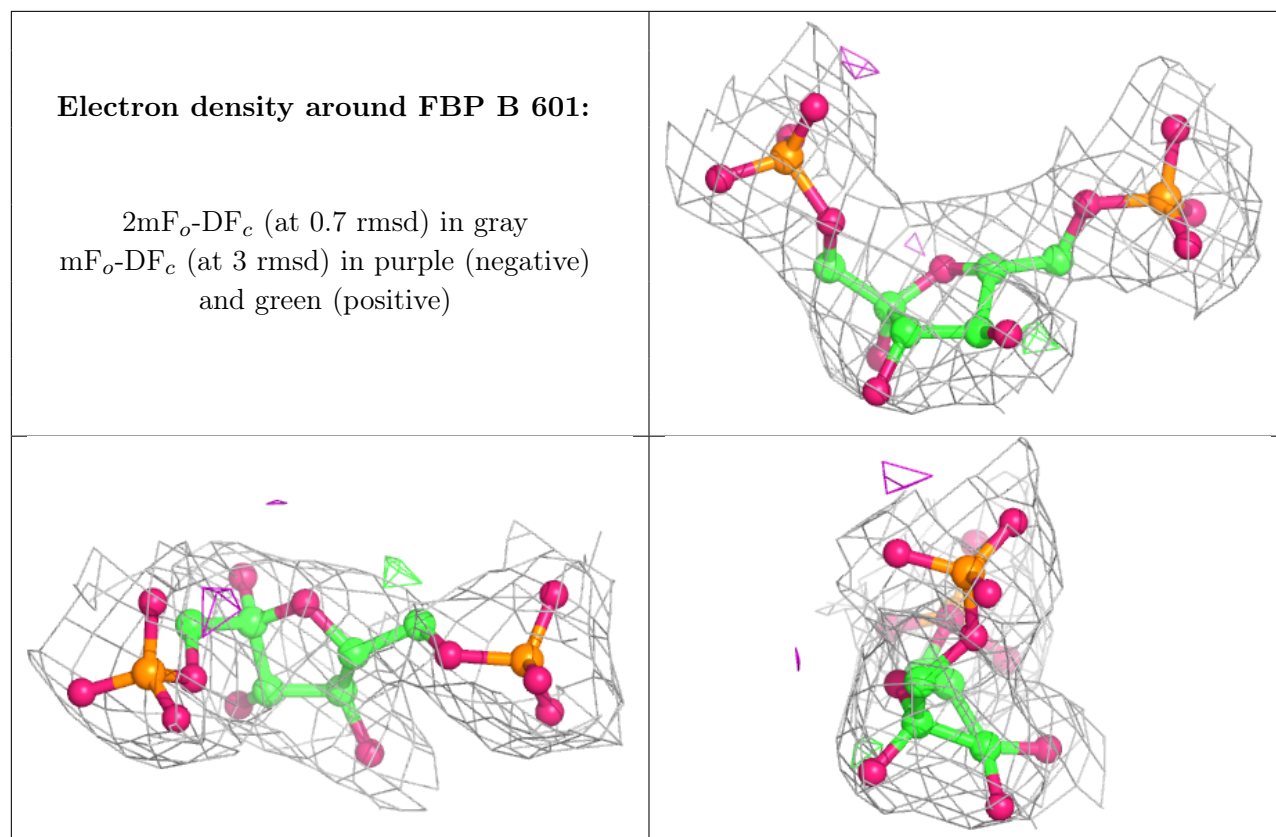
Electron density around FBP C 604:

$2mF_o$-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)
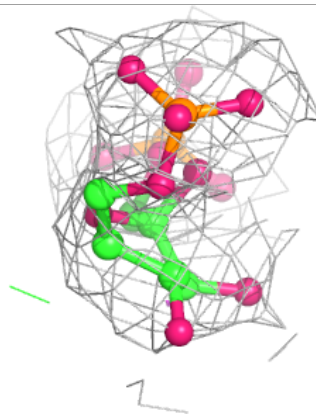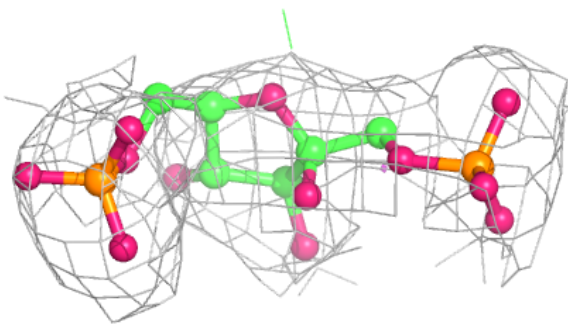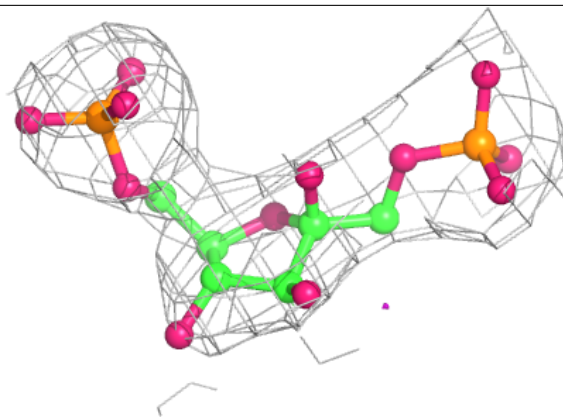
Electron density around FBP D 601:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (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)

6.5 Other polymers ⓘ

There are no such residues in this entry.